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THE WILSON ORNITHOLOGICAL CLUB

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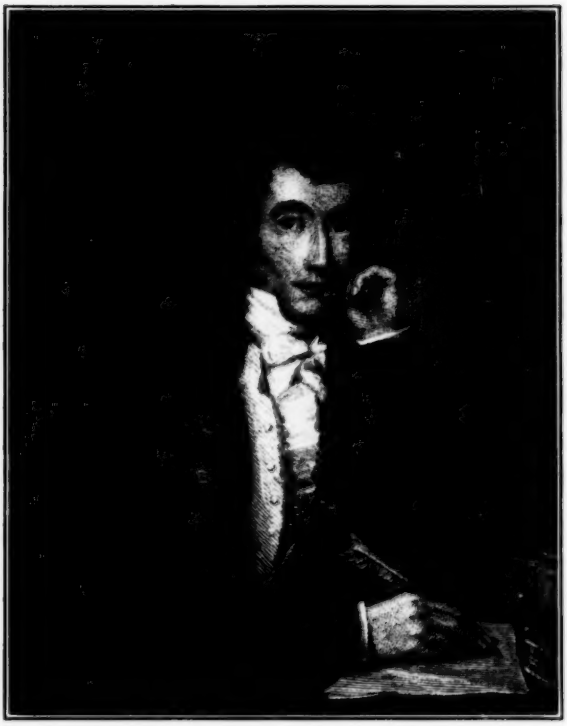

ALEXANDER WILSON

This portrait is a halftone reproduction of the engraving which appears as a frontispiece in the Jameson edition of Wilson's work, and which was after the original painting by James Craw.

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ALEXANDER WILSON: A SKETCH

BY MRS. H. J. TAYLOR

Wherever life attains a fullness of development and gives to the world expression out of its fullness, with such a life we need intimate acquaintance to find the well-spring of inspiration that led to its growth. Alexander Wilson's is such a life.

Between 1808-1813, he published "American Ornithology" in eight volumes. The ninth volume was published by his friend, George Ord, who also wrote a memoir of Wilson for this volume. Each of the full page plates in these volumes contains several species, sketched in outline and colored by hand. The description of each bird, its habits and life history in its natural abode is written from his own observations in the field. Three hundred and twenty species are described, and of these fifty-six were new. This work is standard today and contains all the birds of the Middle States save about twelve. Such a contribution to the world by one man, poor in all material things, but rich in courage and perseverance, merits the title, "Father of American Ornithology."

Wilson's introduction to his Ornithology contains these simple, direct, deepfelt words: "My hopes on this head, are humble enough; I ask only support equal to my merits, and to the laudability of my intentions. I expect no more; I am not altogether even certain of this."[1] Volume I contains two plates colored by Wilson's own hand, and in the Ord edition, Malvina and Helen Lawson colored by hand practically all of the plates. Wilson's style is natural and unaffected. It radiates a joy and an out-of-door atmosphere. The original edition of nine thin volumes, 11x14 inches, sold by subscription at $120, is now rare.

The following extracts are from Wilson's letter to his father on the completion of the first volume of his American Ornithology:

[1]American Ornithology; or the Natural History of the Birds of the United States. By Alexander Wilson, and Charles Lucian Bonaparte. Edited by Robert Jameson, Esq. Edinburgh: 1831. Volume I, page xc.

". . . I have transmitted to you . . . the first volume of my American Ornithology . . . and shall, if I live to finish it, send you regularly the remaining nine volumes as they appear. In giving existence to this work, I have expended all I have been saving since my arrival in America. I have also visited every town within 150 miles of the Atlantic coast, from the river St. Lawrence to St. Augustine in Florida, . . . and would willingly give a hundred dollars to spend a few days with you all in Paisley, but like a true bird of passage, I would again wing my way across the western waste of waters, to the peaceful and happy regions of America. . . . I trust the publication I have now commenced, and which has procured for me reputation and respect, will also enable me to contribute to your independence and comfort, in return for what I owe you. To my stepmother, sisters, brothers, and friends, I beg to be remembered affectionately, Your grateful son."[2]

Alexander Wilson was born in Paisley, Scotland, July 6, 1766. He died in Philadelphia, August 23, 1813, aged 47 years. He lies buried in the churchyard of Gloria Dei, the old Swedish church at Swanson. He inherited the sterling qualities that characterize the Scotch: industry, thrift, courage, perseverance and absolute integrity. His father, a man of superior intelligence, was a master weaver; he also distilled whisky on his own premises. This was no disgrace at that time and he lost none of the people's respect for illicit distilling. He expected to give his son a liberal education, and entertained the hope, almost universally found in the hearts of humble Scottish parents, that Alexander might some time preach the gospel of peace. The family was poor and became still poorer when the mother died, leaving a family of three small children—three other children had died in infancy. Alexander was at this time ten years old. The father soon married a widow with a family of children, and others followed by this union. Alexander's school days were over. He had gotten a foundation in the old Scotch school that opened at six in the morning and closed at six in the evening. But his education was scarcely begun for he had an inherited taste for learning.

The oldest sister married Wm. Duncan, also a weaver. To him Alexander, aged thirteen years, was bound apprentice for three years. The original indenture bears the date July 31, 1779, and at the end there appears in Wilson's own hand writing these lines:

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[2]The Poems and Literary Prose of Alexander Wilson, the American Ornithologist. By the Rev. Alexander Grosart. Paisley, 1876. Volume I, pp. 168-170.

"Be't kent to a' the warld in rhime,
That wi' right meikle wark and toil,
For three lang years *I've ser't my time*,
Whiles feasted wi' the hazel oil." Agst 1782.

For seven years Wilson worked at the loom. It was irksome to him. He was restless and ill content. Confinement became almost unbearable. He longed for freedom and the out-of-doors. Paisley in 1782 had forty-five houses, eighty families, and sixty-six looms. This must have been monotonous to one whose life had the creative instinct.

The loom was not very lucrative and Duncan decided to make a tour of Scotland, taking Wilson with him. This was delightful relief. Wilson showed poetic feeling early in life by publishing some verse in the local newspaper. His poems are not great, but they are expressive and reveal a soul struggling to break out of the narrow bounds of earning bread, to live under a boundless horizon. In "Groans from the Loom," he says:

"Good gods! Shall a man with legs
So low uncomplaining be brought!"

No wonder he was called "The Melancholy Poet."

In the four years as traveling pedler, he visited all the places in Scotland renowned in song and story. No place was too out of the way, if it led him to the haunt of poet or Scottish Chief. These years gave him opportunity for observation, reading and expression. He had poems enough for a book, for which, while he was offering his muslins for sale, he solicited subscriptions. He met with many disappointments, and often his pride was deeply wounded. His keen perception convinced him that much of this was due to his vagrant appearance as a pedler, which was a lower grade of work than weaving. In a letter to a friend dated November 10, 1789, from Edinburgh, he says:

". . . I assure you, sir, that my occupation is greatly against my success in collecting subscribers. A *Packman* is a character which none esteem, and almost everyone despises. The idea which people of all ranks entertain of them is, that they are mean spirited, loquacious liars, cunning and illiterate, watching every opportunity, and using every low and mean art within their power to cheat. . ."[3]

His poems published in 1790 had little success. His most successful poetic effort was "Watty and Meg," published anonymously in 1792. It was ascribed to Burns, who said he would be proud to claim its authorship. One hundred thousand copies were sold in a

[3]From Grosart: *Op. cit.*, vol. i, p. 49.

few weeks, and Wilson's share of the sales was twelve copies of the book. On reading the story of "Watty and Meg," a wife exclaimed to her husband, "D'ye ken what Sandy Wilson has done? He's poem'd us.."

Wilson also wrote satire, one published anonymously was judged libelous. He frankly acknowledged its authorship and was condemned to burn the satire and pay a heavy fine. The satire he burned publicly at Paisley Cross. Being unable to pay the fine of £12. 13s. 6d. he was imprisoned. He felt the disgrace and the hurt was deep. On his release he was broken in spirit. He was suspected and looked upon as dangerous because of his sympathy with the French people in the oncoming revolution. Poetic success was impossible. Accounts of free and vast America must have opened a door to him. With his nephew, Wm. Duncan, he determined to enter its boundless forests. To earn money for his passage, he returned to the loom for four months and lived on a shilling a week.

He slept on the deck of a crowded sailing vessel, seven weeks, reaching Newcastle, N. J., July 14, 1794. He walked from Wilmington to Philadelphia, thirty miles. He shot the first bird he saw, a Red-headed Woodpecker, and thought it the most beautiful bird he had seen. His description of this walk reveals his interest in birds and out-of-door life. Wilson worked at most anything obtainable while preparing himself in writing and arithmetic. He began teaching and continued nearly ten years; at Milestown, Pennsylvania, he taught about six years. His poem "The Schoolmaster," has a place in Spofford's Choice Literature.

While teaching at Milestown, Pa., he writes to his father in a letter dated August 22, 1798, ". . . I should be happy, dear parents, to hear from you, and how my brother and sisters are. I hope David will be a good lad, and take his father's advice in every difficulty . . . I should wish also that he would endeavour to improve himself in some useful parts of learning, to read books of information and taste, without which a man in any country is but a clodpole; but beyond everything else, let him indulge the deepest gratitude to God, and affectionate respect for his parents. . ."[4]

In 1802, he went to Gray's Ferry, four miles from Philadelphia. This was his last and most fortunate move while teaching. Here he made lasting friendships and received help and encouragement for his great work. George Ord was an unfailing friend and often a companion on expeditions. William Bartram, the botanist, gave him

[4]From Grosart: *Op. cit.*, vol. i, p. 65.

free access to his library and gardens. Lawson, the engraver, gave him lessons in drawing, coloring and etching. So excellent was his drawing of birds, and so encouraged was he, that he determined to make a collection of birds.

In October, 1804, with his nephew, Wm. Duncan, and Isaac Leech, the son of his landlady, he made an expedition to Niagara Falls and back, reaching Philadelphia December 7, having walked nearly 1300 miles in fifty-nine days. He made forty-seven miles the last day. In a letter to his father at this time, he says: "My heart has ever preserved the most affectionate veneration for you and I think of you often with tears." In a letter to William Bartram dated December 15, 1804, Wilson writes: "Though now snug at home, looking back in recollection on the long, circuitous journey which I have at length finished, through deep snows, and almost uninhabited forests; over stupendous mountains, and down dangerous rivers; passing over, in a course of thirteen hundred miles, as great a variety of men and modes of living, as the same extent of country can exhibit in any part of the United States . . . yet so far am I from being satisfied with what I have seen, . . . that I feel more eager than ever to commence some more extensive expedition; . . . With no family to enchain my affections, no ties but those of friendship, and the most ardent love of my adopted country; with a constitution which hardens amidst fatigues, . . . I have at present a real design of becoming a traveller. . ."[5]

On the Niagara Falls expedition Wilson wrote his longest poem, "The Foresters." Dr. Elliott Coues advises every one to read this "for the interesting facts." It also contains many beautiful descriptions.

On his return from Niagara Falls, Wilson records in his journal, "I have seriously begun to make a collection of drawings of birds in Pennsylvania." In a few months he extended his plan to include the whole of the United States. Wilson never lost an opportunity of defending the value of a bird if to some one it seemed a nuisance. Once he encountered an old German who accused the Kingbird of eating his *peas*. Wilson denied the charge, "They never ate a pea in their lives." The German said emphatically, "Vell, I have seen 'em with mine two eyes, blaying about the hifes and snapping up de pees." I suppose the ornithologist and the accurate observer were both satisfied.

Between 1805 and 1813, Wilson explored different parts of the country to enlarge his observations, to collect specimens and to study

[5]From Grosart: *Op. cit.*, vol. i, p. 112.

the life of birds in their native haunts. With his friend, George Ord, he spent four weeks at Egg Harbor. This was the last of six trips to New Jersey coast to study water birds. Wilson traveled through New Jersey and the New England States to Maine, and south to Florida. He made an expedition to New Orleans, going from Pittsburgh to Louisville by skiff.

The summer of 1807 taxed Wilson's strength to the limit with close and constant application to his manifold tasks. September, 1808, his first volume, an edition of 200 copies, appeared. The text, 158 pages, nine beautiful plates, with thirty-four hand-colored specimens. Wilson set out for subscribers. He received compliments on his work, but subscriptions at $120 for the set were not easily obtained. It is of interest that Robert Fulton subscribed. Thomas Jeffersan, then President of the United States, also was a subscriber, and wrote to Wilson thus: "Th: Jefferson having a few days ago only received a copy of the printed proposals for publishing a work on American ornithology by mr. Wilson, begs leave to become a subscriber to it, satisfied it will give us valuable new matter as well as correct the errors of what we possessed before. he salutes mr. Wilson with great respect. Washington, Oct. 9, 07."[6]

Mr. Wilson visited the professor of Natural History at Princeton. He wrote in his journal, "I found to my amazement that he scarcely knew a sparrow from a woodpecker." Wilson also solicited the Governor of New York, D. T. Tompkins, and relates that "he turned over a few pages, looked at a picture or two, and asked me my price, and while in the act of closing the book added—'I wouldn't give $100 for all the birds you intend to describe even if I had them alive'."

On June 6, 1811, Wilson wrote the following lines to his brother, David:

". . . By the first opportunity, I will transmit a trifle to our old father, whose existence . . . is as dear to me as my own. But, David, an ambition of being distinguished in the literary world, has required sacrifices and exercises from me with which you are unacquainted. . . . Since February, 1810, I have slept for several weeks in the wilderness alone, in an Indian country, with my gun and my pistols in my bosom, and have found myself so reduced by sickness as to be scarcely able to stand, when not within 300 miles of a white settlement, and under the burning latitude of 25 degrees. . ."[7]

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[6]Alexander Wilson, Poet-Naturalist. A Study of His Life with Selected Poems. By James Southall Wilson, Ph. D. New York and Washington. 1906. Page 84.

[7]Grosart: *Op. cit.*, vol. i, p. 226.

The accommodations in Virginia, the Carolinas, and indeed all through the South, Wilson found desolate and wretched. Everything was conducted by negroes. Rooms with barren broken walls, a place to lie down and a broken chair or bench were everywhere the same. He says, "The meals were so served up that a wolf would have shrunk back in dismay. These 'hospitable mansions' were raised from the ground on posts, leaving a retreat below for hogs, which kept up their serenade all night."

In 1810 Volume II was ready. Again Wilson set out on a strenuous expedition for specimens of birds and subscribers to the American Ornithology. The latter was a much more difficult task than the former. From Pittsburgh to Louisville he went by skiff, then on foot through almost an impenetrable wilderness to Natchez and New Orleans, sleeping in the woods and subsisting on biscuits and whatever his gun could procure. Soliciting for subscriptions was full of disappointments, hard rebuffs, indifferences, insults. He had letters of introduction to possible subscribers in Louisville, but not one subscribed. He met almost by accident, Audubon, who had a store in Louisville. Wilson requested Audubon's patronage. Then and there between these two remarkable men, the only active ornithologists of that time, began quarrel and strife, the embers of which have been kept aglow for more than a century. Two men more different in personality, and more marked in family background, could scarcely be found. The Scottish life of toil, industry, poverty, struggle, with its sterling qualities of truth and faith and perseverance, were all typified in Wilson. Audubon was born, according to Herrick,[8] at Les Cayes, Haiti, on April 26, 1786. A part of his education was obtained in Paris. He studied design under the eminent painter, David. He inherited lands near Philadelphia. He was a graceful dancer—at times, a charming dancing master. He had open door to the most exclusive social life of the day.

Wilson, a man of forty-four, was working beyond his limit, enduring disappointment, rebuffs and insult in his attempt for subscribers. Audubon, a young man of twenty-four, had not yet received any of the hard knocks which Wilson had known from childhood. These are the two men as they met face to face in Louisville, March 9, 1810. Audubon wrote, "I felt surprised and gratified at the sight of his [Wilson's] volumes, turned over a few of the plates, and had already taken a pen to write my name in his favour, when my partner rather abruptly said to me in French, 'My dear Audubon, what induces

[8]Audubon the Naturalist, A History of His Life and Time. By Francis Hobart Herrick, Ph.D., Sc.D. New York, 1917. Page 53.

you to subscribe to this work? Your drawings are certainly far better, and again you must know as much of the habits of American birds as this gentleman.' Whether Mr. Wilson understood French or not, or if the suddenness with which I paused, disappointed him, I cannot tell; but I clearly perceived that he was not pleased. Vanity and the encomiums of my friend prevented me from subscribing."[9] And just a few lines further along (page 439) he wrote: ". . . I did not subscribe to his work, for, even at that time, my collection was greater than his."

A weeks' canvass in Louisville produced for Wilson not a single subscriber. He wrote in his diary, "Science or literature has not one friend in this place." His lines,

> "Though western forests deep and drear
> Far from the haunts of science thrown,
> My long laborious course I steer
> Alone, unguided and unknown."

must have expressed his feelings on leaving Louisville.

I know of no value to science that has come through the long continued controversy. It is of no great moment whether Wilson or Audubon first saw the small flycatcher. Time helps us all to evaluate life. Looking out over a wider horizon, the experiences of the years are softened and blended into the background. Bitterness that thrives in the tenseness of rivalry, withers when life is seen in its reality.

In 1836, when Audubon was 50 years old, he visited the scenes of his youth in and around Philadelphia. In his journal under date of October 15, 1836, we read, "Passed poor Alexander Wilson's school house and heaved a sigh. Alas! Poor Wilson! Would that I could once more speak to thee and hear thy voice!" This was the expression of a great soul to a soul whose greatness he had been unable to recognize twenty-six years before. Battle and strife are over. The essence of these two lives, expressed through their work on ornithology, has enriched the world. We are grateful debtors to Audubon and to Wilson.

Wilson never married. It is not revealed whether the little lass mentioned in some of his early poems was a deep heart affair. Soon after coming to America, another came into his life, stirring the depths of his heart with fulness and power. Realizing she was not for him, because she belonged to another, he moved away with a heart sore and distressed. Intense work to earn bread; intense study that he might live more abundantly; intense heartache that could not be satisfied—were enough to cause melancholy days at Gray's Ferry.

[9]Audubon's Ornithological Biography, Volume I, pp. 438-439.

Here another romance came into his life with Ann Bartram, granddaughter of the botanist and niece of Wilson's friend, Wm. Bartram. Ann's father sternly refused his consent. A poor school teacher was no match for his daughter. Parental authority was final in those days. Ann soon married, and perhaps Wilson came to know that not all of life's happiness comes through one avenue. He laid hold of his ornithology as a profession and worked more seriously than ever. Years later he became engaged to Miss Sarah Miller, sister of Congressman Miller of Pennsylvania. Death called him before they were married. She and George Ord were executors of Wilson's estate.

The great strain under which Wilson worked for so many years, and at manifold tasks, proved too much for even his strong constitution. He had been realizing this for some time. His unbounded perseverance knew no limit. Early in July, 1813, the eighth volume was ready. The strain was telling—still he pursued. While talking to a friend, about August 12, he saw a bird of a species he wanted. He followed it, swam the river with his clothes on. He secured the bird. A severe cold followed. In ten days the struggle was over. His brother, David, who had emigrated to America in 1811, reached his bedside a few hours before the end. David says, "I caught his hand, he seemed to know me and that was all. He died next morning at nine o'clock and was buried the next day with all the honors due his merit."

Wilson had sometime expressed the wish "to be buried in some rural spot, sacred to peace and solitude." This wish, no doubt, would have been carried out had it been known at that time. He was laid in the little churchyard of Gloria Dei, the old Swedish church at Swanson. The tomb which covers the grave was erected by Miss Sarah Miller and the inscription reads:

THIS MONUMENT
COVERS THE REMAINS OF
ALEXANDER WILSON
AUTHOR OF
"AMERICAN ORNITHOLOGY."
HE WAS BORN IN RENFREWSHIRE, SCOTLAND,
ON THE 6TH OF JULY, 1766,
EMIGRATED TO UNITED STATES
IN YEAR 1794
AND DIED IN PHILADELPHIA
OF THE DYSENTERY
ON THE 23D AUGUST, 1813,
AGED 47.

Alexander Wilson lived forty-seven years of intense earnestness. The expression of his life has enriched the world not only through his ornithological work, but also through his character, so strong in its purpose that it became indomitable through hardships and suffering. His work on birds grows in value with the years, and the old churchyard of Gloria Dei will be a Mecca because it holds the grave of Alexander Wilson.

Sioux City, Iowa.

NOTES ON A COLLECTION OF HAWKS FROM SCHUYLKILL COUNTY, PENNSYLVANIA

BY GEORGE MIKSCH SUTTON

Illustrated with diagrams by Leo A. Luttringer, Jr.

On October 19 and 20, 1927, the writer visited the region of Drehersville, Schuylkill County, Pennsylvania, for the purpose of observing a remarkable migration of hawks which had been reported by Game Protector Archie C. Smith of Lavelle, Pennsylvania, as occurring at certain points along Blue Mountain. A study of the local aspects of the migratory movement of these birds will appear in a subsequent paper after further investigations have been made. Interesting data were gathered, however, concerning the weight, food, and plumage of the birds collected and it seems advisable to present this material separately.

On October 17 Mr. Smith and certain sportsmen from Drehersville, Pottstown, and Reading, secured, among other birds of prey which were not saved, eighteen Sharp-shinned Hawks (*Accipiter velox*). On October 19 four Goshawks (*Astur atricapillus*) were secured. On October 20, while on Blue Mountain, we collected five more sharp-shins. On October 22 several gunners accompanied Mr. Smith to a point along the mountain past which the hawks flew in numbers, and secured, in a remarkably short time, a total of ninety sharp-shins, sixteen Goshawks, eleven Cooper's Hawks (*Accipiter cooperi*), thirty-two Red-tailed Hawks (*Buteo borealis borealis*), and two Duck Hawks (*Rhynchodon peregrinus anatum*).

Specimens were taken from 8 A. M. until almost 5 P. M., but unfortunately no data were preserved as to just when individuals were secured so that we cannot correlate our information on stomach contents with the time of day the specimens were taken, and cannot say, therefore, at just what periods migrating hawks are likely to spend time in capturing prey and eating their meals. It would seem from the evidence at hand that prey is captured actually *en route* and that

pauses are made only as the taking of prey justifies them, although it is likely that food is taken, if possible, early in the morning, before the day's flight has begun.

Sharp-shinned Hawk

Of the one hundred and thirteen sharp-shins collected twenty were females, and ninety-three were males; all were in adult plumage save ten, eight males and two females, which were wholly in the brown, mottled plumage of the immature bird. Most of these birds, while in excellent physical condition, were not particularly fat; and the stomachs of half of them held food though most of them, at the time they were shot, had not filled themselves to capacity. It is thought that the females were actually less numerous than the males on the days these birds were collected; it may be that they were flying higher, however, and therefore did not so often come within gun-range.

The weight of the birds varied somewhat, of course, with the amount of food they had eaten. Males which had nothing in their stomachs or crops averaged under 4 ounces in weight, the lightest specimen weighing a fraction over 3 ounces, the heaviest, almost 4⅛ ounces. Males whose stomachs held food weighed a little more than those whose stomachs were empty, the lightest being 3¼ ounces, the heaviest 4¾ ounces. The females were considerably heavier. Females whose stomachs were empty ranged in weight from 6 ounces to almost 8 ounces, while those whose stomachs contained food ranged from a little over 6 ounces to 8½ ounces, with an average of approximately 6⅜ ounces. In no case were the stomach and crop packed to capacity with food. According to our data the average female sharp-shin, therefore, weighs about 2½ ounces more than the male. Audubon gives the weight of the male as 3½ ounces; of the female 7½ to 8¼ ounces.

All the sharp-shin stomachs held remains of small birds. This species evidently eats its prey in rather small mouthfuls, and plucks its victims fairly well, before or while eating, even though the necessity for haste during migration may cause the birds to be less tidy in swallowing food at this season than otherwise. In most cases bills and feet of the birds, along with most of the bones, aside from the sternum and the cranium, were eaten, the feet always, apparently, being swallowed entire. Mandibles, in three cases, were found joined together as though the front of the head had been swallowed in one piece. In only one case had large feathers been swallowed: a female sharp-shin had plucked four of the rectices of a Myrtle Warbler and swallowed the tail bones with the remaining eight feathers attached.

There was considerable evidence that these hawks capture as much prey as they can eat, and perhaps more. Six individuals contained more than one species of bird, and one, a female, had eaten three small birds, apparently at one time, if we may judge from the stage of digestion which was apparently about the same in all three. We found no evidence that sharp-shins cast up pellets of indigestible matter, though they probably do so.

The largest species which the sharp-shin had killed were the Robin and Rusty Blackbird. There was not a trace of fur or mammalian bones. Insects which were found may be attributed to the small birds whose gizzards had been swallowed entire; bits of vegetable matter doubtless were of similar origin. Since the remains of Robins were found in both male and female sharp-shins it may be inferred that, in spite of the difference in the size of the sexes, they are equally savage and powerful in dealing with their prey. The females, however, often had their crops proportionaltely fuller than did the males, as though they habitually gorge more often than do their daintier, smaller-boned mates.

Fifty-one of the sharp-shin stomachs were empty; in the other sixty-two stomachs were found the remains of twelve Song Sparrows (*Melospiza melodia melodia*), nine Myrtle Warblers (*Dendroica coronata coronata*), six Slate-colored Juncos (*Junco hyemalis hyemalis*), five Golden-crowned Kinglets (*Regulus satrapa satrapa*), five Hermit Thrushes (*Hylocichla guttata faxoni*[1]), three Tree Sparrows (*Spizella arborea arborea*), three Fox Sparrows (*Passerella iliaca iliaca*), three Black-poll Warblers (*Dendroica striata*), three Robins (*Turdus migratorius migratorius*), two Downy Woodpeckers (*Dryobates pubescens medianus*), two Towhees (*Pipilo erythrophthalmus erythrophthalmus*), two Winter Wrens (*Nannus troglodytes hiemalis*), two Brown Creepers (*Certhia familiaris americana*), two Ruby-crowned Kinglets (*Corthylio calendula calendula*), one Prairie Horned Lark (*Otocoris alpestris praticola*), one Rusty Blackbird (*Euphagus carolinus*), one Goldfinch (*Astragalinus tristis tristis*), one Henslow's Sparrow (*Nemospiza henslowii susurrans*), one White-throated Sparrow (*Zonotrichia albicollis*), one Cape May Warbler (*Dendroica tigrina*), one Chickadee (*Penthestes atricapillus atricapillus*), one Olive-backed Thrush (*Hylocichla ustulata swainsoni*), and five held the feathers of species we could not satisfactorily determine.

[1]It is the general policy of the WILSON BULLETIN to follow, in the matter of nomenclature, the A. O. U. Check-list and its official supplements.—Ed.

Most interesting of these items was, perhaps, the Henslow's Sparrow, not alone because it is rare in Pennsylvania, but because it is a very retiring species of the open fields which we would not expect the sharp-shin normally to catch. Evidently the Chickadee, in spite of its abundance in the autumn woods, is not often caught, and the Myrtle Warbler and Song Sparrow probably furnish a large proportion of the food of the migrating sharp-shins while they are in this region.

The eight specimens which were obviously immature, in brown, mottled plumage, showed no evidence of molt. There were no clear, gray feathers among the brown of head or back, and the remiges and rectrices evidently had not even started to drop out. Evidently the dropping of the feathers of this first winter plumage does not begin during the period of the fall migration.

The apparently adult individuals, on the other hand, with but few exceptions, showed evidence of a certain immaturity, chiefly in the brownish, worn rectrices, in the occasional rusty-edged upper tail coverts, lesser wing coverts and scapulars, and in the outermost rectrix, which was, in length, shape, and pattern, often different from the other rectrices. It now appears to me that most of these birds were of about the same age; whether they were young of the previous year emerging into a plumage somewhat more perfect than that of their first breeding season, or fully adult birds more than two years old, with their old plumage so faded a brown as to have the appearance of immaturity, is open to question. It is known that the plumage of the immature bird during its first winter is invariably brown, and rusty-edged; but I find no definite data regarding the first adult plumage, which may be different in minor details, from subsequent plumages.[2]

In only two of the mature birds were the outermost rectrices obviously new, and in these specimens the barring of the outer rectrix was virtually the same as that of the adjacent feathers. Since in all the other apparently mature birds the outer rectrix either had a pattern distinctly different from that of the adjacent feather or was noticeably different in length and shape from the other rectrices; and since the barring of these worn outer rectrices inclined toward that of the first winter plumage, we are led to believe that most of these birds were two years of age, molting into their second winter plumage which is not complete, it would seem, before the birds reach their winter range; and that but two of the birds were in fully adult plumage, molting into the high plumage of the coming breeding season. If this be true

[2]Forbush says: "highest plumage may require another year or more" [after the post-juvenal molt]. Birds of Massachusetts and other New England States, Volume II, 1927, p. 105.

it is interesting indeed to note that the outermost rectrix of the two-year old bird drops out *after* the migration has been performed, whereas the adult bird molts this rectrix presumably before migration starts.

It seems strange that the molting of the outer rectrix in the two-year old should differ from that of more mature birds; yet some purpose at present unknown may be served by such process.

It appears, furthermore, that in many of the two-year old birds the old, outermost rectrix which has not dropped out is noticeably longer than any of the fully developed *new* rectrices. (See Fig. 3). This suggests that the tail of the year-old and two-year old may actually be longer than it is in the third year. The molts which lead up to a fully adult plumage, therefore, tend toward a reduction of number of bars on the outermost rectrix, and to an actual shortening of the tail. The two fully adult males in the series had tails of exactly the same length as that of the average fully-developed *new rectrices* in the two-year old birds.

If it be true that two-year old birds do not molt the outer rectrix before or during migration we may infer that these old feathers are just as efficient as new ones.

Among the birds which I believe to have been two years old, there was a noticeable parallelism of the molt in wings and tail. Specimens in which the primaries were not fully molted had, without exception, tails in which two or more feathers were short. As a rule only the outermost primary was underdeveloped; in such specimens the rectrices adjacent to the outermost were often short. If the two or three outer primaries were not fully developed the rectrices were, as a rule, of variable length, from two to six of them usually being short. While the feathers apparently were developing at about the same rate on both sides of the tail there was often considerable difference in length of opposite pairs.

It was noticeable that the actually though not relatively longer tails of the females usually had more bars than those of the males. It is not easy to understand why the sexes of a species, otherwise so similar in color pattern, should find it necessary to differ in this respect. There were usually five distinct bars on the outermost rectrix of the two-year old males; on the outermost rectrices of the females there were usually six distinct bars. None of the females, according to our belief, was more than two years of age.

In most specimens the barring of the rectrices was bilaterally symmetrical. But in some specimens the barring was asymmetrical, in

others the bars were peculiarly or incompletely formed, and in some the fully developed opposite outer rectrices were of different length.

The tails of year-old and two-year old female specimens were *all* somewhat rounded, as in the Cooper's Hawk. This roundness was evident in but three of the male specimens, whereas the tendency toward furcation which was evident in many of the male specimens was not evident in any of the females.[3]

If we are right in our supposition that most of these birds were two years old, then the preponderance of birds of this age is interesting. One might expect to find a large proportion of young of the year

FIGURES 1-4

during any fall migration. Perhaps these young move in a body largely at another period of the fall, however; or perhaps mortality among juvenals is greater than we realize, and the two-year old birds are actually more abundant during the fall migration than birds of other ages.

The average lengths, in inches, of the two fully adult males were: tarsus, 1.41; wing, 6.69; tail, 5.24; of the two-year old males: tarsus, 1.43; wing, 6.59; tail, 5.33; of the one-year old males: tarsus, 1.38; wing, 6.5; tail, 5.27 (the year-old males are all small individuals, apparently). The two-year old females measure: tarsus, 1.54; wing, 7.92; tail, 6.29; the year-old females: tarsus, 1.56; wing, 7.87; tail, 6.51.

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[3]Forbush states that the tail of the sharp-shin is "very rarely slightly rounded." *Op. cit.*, II, page 104.

Cooper's Hawk

All of the eleven Cooper's Hawks were adult, seven being males and four, females. Females of both the sharp-shin and Cooper's Hawk seem to have been noticeably less abundant than the males. The males whose stomachs were empty weighed from slightly under 12 ounces to a little less than 13 ounces; those whose stomachs contained food, from a little more than 11 ounces to almost 13½ ounces, with an average weight of over 12½ ounces. The females, on the other hand, weighed over a pound in every case, the one specimen with an empty stomach weighing 1 lb. 4 oz., while those with food in their stomachs ranged from 1 lb. 2 oz. to 1 lb. 6½ oz., with an average weight of a little over 1 lb. 4 oz. Average females, according to our data, therefore weigh about 8 ounces more than average males, and the average male Cooper's Hawk weighs about twice as much as the average female sharp-shin.

It is at once evident from our limited investigation that the larger Cooper's Hawk captures much heavier prey than does the sharp-shin. Four of the stomachs were empty. Each of the stomachs containing food held the remains of but one creature which had been captured, save one which held two birds. One stomach held the hind quarters of a Gray Squirrel (*Sciurus carolinensis leucotis*); two, Song Sparrows; two, Robins; one, the head and breast of a Bob-white (*Colinus virginianus virginianus*); and one a Fox Sparrow, with another small bird the species of which was not determined. Both the Gray Squirrel and Bob-white had been captured by female hawks.

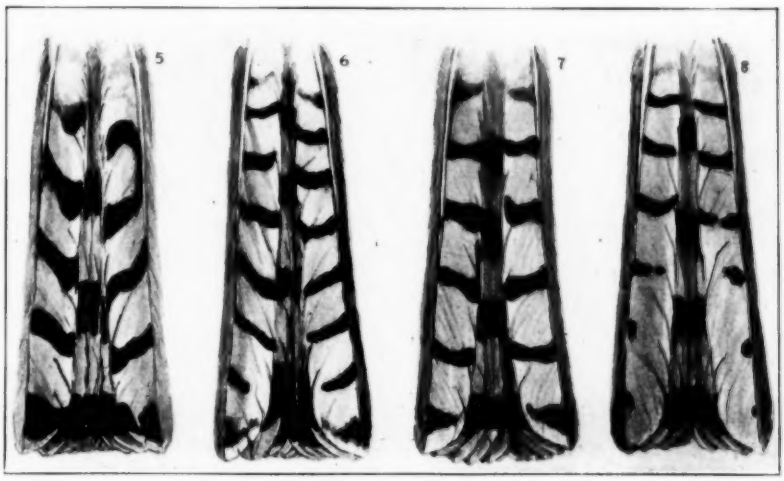
The series of Cooper's Hawks showed little variation in color; three males were so richly colored and heavily barred below that a band across the breast presented the appearance of an almost solid color area. The females were, in every instance, less intensely colored than the males.

In no specimen was the molt of either the primaries or rectrices complete. As a rule the outermost primary was but partly developed. In most specimens this feather was well out of the sheath, save in two, where the tip was not yet exposed. The outermost rectrices had not, in any case, been dropped, though all the other tail feathers were new, and most of them of full length. These outer rectrices did not have the appearance of old, worn feathers, but they had a slightly paler coloration, the barring was noticeably different and not so intense as in the rest of the tail, their tips were different in shape from the other more rounded rectrices, and their length in some cases varied so much from what might normally be expected, that I assume the feathers to

be part of the former plumage, and perhaps of the first adult plumage, as in the sharp-shin.

Molting of the rectrices evidently does not take place in a systematic fashion, for new feathers occurred anywhere, usually adjacent to the outer feathers, or in the middle of the tail. If the unmolted outer feather in these specimens is of the first adult plumage, then it is interesting to observe that its comparatively square tip approximates that of the average sharp-shin tail feather, and therefore suggests the possible development of this species from an ancestor similar to the smaller bird.

The average length, in inches, of the male specimens were: tarsus, 1.8; wing, 9.11; tail, 7.6; of the females: tarsus, 1.98; wing, 10.51; tail, 8.86.



FIGURES 5-8

GOSHAWK

The twenty Goshawks, four males and sixteen females, were all fully adult. The males ranged from 1 lb. 4 oz. (empty) to 2 lbs. 3 oz. (stomach filled) with an average weight of 1 lb. 13½ oz. The weight of the females varied considerably, some of those with empty stomachs weighing much more than others which had crops fairly full. Those which had no food in their stomachs weighed from 2 lb. 1 oz. to 2 lb. 8 oz. with an average of 2 lb. 4½ oz. Those which had eaten food ranged from 2 lb. 3 oz. to 2 lb. 12 oz. with an average of 2 lb. 8¼ oz. The average weight of all females was 2 lb. 6⅓ oz. Female Goshawks therefore, weigh about 9 ounces more than the males.

The Goshawk, heavy and powerful as it is, evidently does not hesitate to capture large quarry. Ten of the stomachs were empty. Four of these stomachs were of birds shot early in the morning, apparently before they had had opportunity to capture food. Males and females captured equally large prey. Two stomachs held Ruffed Grouse (*Bonasa umbellus umbellus*); one, a Gray Squirrel; one, a Cottontail Rabbit (*Sylvilagus floridanus transitionalis*); one, a Red Squirrel (*Sciurus hudsonicus hudsonicus*); two, Chipmunks (*Tamias striatus lysteri*); and one, an adult White Leghorn Chicken. The feet of the two grouse had been swallowed entire.. Very few feathers were found, however, and the tails of the squirrels had evidently been rather carefully plucked before they were eaten. The Goshawk swallows proportionately larger mouthfuls than either the Sharp-shinned or Cooper's Hawk.

The plumage of most of these specimens was at first glance complete. It was found, however, that in most of the tails many of the rectrices were old, though their tips were in remarkably good condition. Most of the new rectrices were of full length, as though the dropping and complete growth of one rectrix took place before the molting of the next feather. The first or second distal primaries in nine specimens were not fully developed.

Much variation in the markings of the underparts was noticeable. One male, small in size, was very evenly colored, the breast and belly being finely barred and streaked with such soft tones as to give the appearance, almost, of a solid color. Two of the females were rather heavily streaked on the breast.

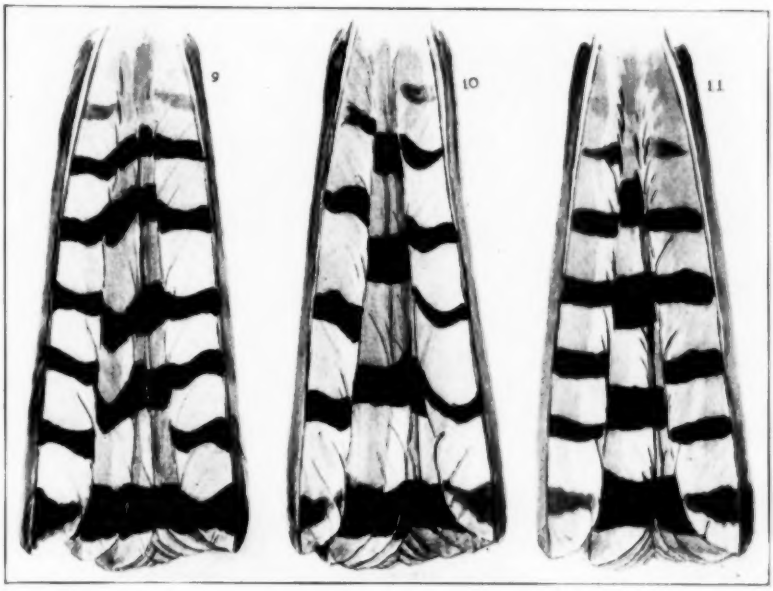
Not much variation occurred in the barring of the rectriees. The outer rectrix was usually but faintly barred, principally toward the tip, the other rectrices being barred but not in so definite a manner as in the Sharp-shinned and Cooper's Hawks.

The smallest male's measurements, in inches, were: tarsus, 1.95; wing, 11.94; tail, 8.5; the largest male's: tarsus, 2.22; wing, 12.8; tail, 9-12; the average measurements of the males were: tarsus, 2.1; wing, 12.47; tail, 8.89. The smallest females' measurements were: tarsus, 2.16; wing, 12.37; tail, 9.22; the largest female's: tarsus, 2.43; wing, 13.87; tail, 11.13; the average measurements of the females were: tarsus, 2.28; wing, 13.54; tail, 10.46.

Red-tailed Hawk

The thirty-two red-tails were chiefly adult, there being but three immature birds, one of which had virtually completed the dropping of the barred rectrices of its first year's plumage. The average weight

of the males was 2 lb. 1 oz.; of the females, 2 lb. 6 oz. Of the three immature birds one was a male weighing 1 lb. 3 oz. (stomach empty), and two were females, weighing 2 lb. 2 oz. and 2 lb. 6 oz. respectively, the stomachs of these specimens being fairly well filled. Of the twenty-nine adults fifteen were males and fourteen females. The adult males ranged in weight from 1 lb. 13 oz. (with empty stomach) to 2 lb. 4 oz. (much food). Males without food in their stomachs averaged 2 pounds. The females ranged from 2 lb. 5 oz. (one with stomach empty; two with some food) to 2 lb. 13 oz. (stomach empty), those without food in their stomachs averaging 2 lb. 7 oz. The heaviest female, referred to above, was a thin but very heavy-boned individual with magnificent plumage. Average female red-tails weigh 7 ounces more than the males, according to these data.



FIGURES 9-11

That the character of the food of the red-tail is very different from that of the sharp-shin, Cooper's Hawk, and Goshawk, was apparent upon examination of the first stomach, which chanced to hold two Short-tailed Shrews. Twelve stomachs were empty; in the twenty stomachs which held food were eleven Field Mice (*Microtus pennsylvanicus*), four Short-tailed Shrews (*Blarina brevicauda talpoides*), three Red-backed Mice (*Evotomys gapperi gapperi*), three Chipmunks, three small Garter Snakes (*Thamnophis sirtalis sirtalis*), two Red

Squirrels, one Winter Wren, one Song Sparrow, one Hermit Thrush, one Gray Squirrel, one Brown Rat, one half-grown White Leghorn Chicken, one large grasshopper, two crickets, and one large beetle of the family *Elateridae*. Such an array of food items in only twenty-two stomachs is noteworthy. Only seven of these stomachs held but one item; the others had a variety in each. If the above stomach contents are at all normal the red-tail captures about five harmful or unimportant organisms to one economically valuable one. There is evidence from the above diagnosis of stomach contents that the red-tail during migration does not confine its hunting to the open fields, though it probably has a tendency to do so. The Red-backed Mice and Winter Wren, at least, probably required pursuit in heavily wooded areas. The three snakes are interesting since it was so chilly at Drehersville during our stay that no snakes were about; yet the hawks had somehow found them, probably north of Schuylkill County. The red-tail apparently swallows more feathers and hair with its prey than do the preceding species; and the probability is that the pellets of indigestible material which it ejects are correspondingly larger. The red-tail has a tendency to bolt its food. The mice and shrews, snakes, and other smaller items were swallowed almost entire; the Chipmunks had been torn into four or five pieces.

The immature male specimen, while in good feather, was quite small, having the following measurements (inches): tarsus, 2.16; wing, 13.12; tail, 7.62. The two immature females varied considerably in size and color, one having only six of the barred rectrices of the immature plumage remaining in the tail. The average lengths of the immature females were (inches): tarsus, 2.25; wing, 14.25; tail, 8.9.

The most noticeable feature of the plumage of the adult birds was the almost uniformly perfect development of the primaries in specimens where the tail was only partly molted. In only four specimens were primaries undeveloped, whereas in only six specimens were the tails perfectly molted. Such a state of affairs may indicate that the full development of the remiges is of much more importance to the migrating red-tails than it is to the sharp-shins; and the status of the rectrices is of comparatively small importance.

The old rectrices of fully adult birds were much paler and more frayed than the new feathers, the age of such specimens being obviously greater than two years. One specimen had such a ragged tail that the powers of flight of the individual must have been impaired.

Most of the adult specimens were normally marked. One, however, had unusually bold markings on the underparts, the lighter areas

almost white, the brown areas clearly distinct. The subterminal band of black on the tail was about the same throughout the series, and there was considerable tendency to barring at the bases and near the shafts of feathers in birds not obviously fully mature. Some specimens had noticeable barring on the upper surface of the outer vane of the outermost rectrices. One specimen, a male, was very pale above, especially on the head, where the wide, light margins of the feathers gave a mottled and streaked appearance.

The adult males averaged (inches): tarsus, 2.07; wing, 13.9; tail, 7.97; the adult females averaged: tarsus, 2.25; wing, 14.9; tail, 8.44.

Duck Hawk

Of the two specimens of this species secured, one was an immature female weighing 2 lb. 7 oz., the stomach of which held a few feathers of a Robin. The other was an adult male, very fat, weighing 1 lb. 10 oz., with an empty stomach.

The immature female was in normal, perfect plumage, the tips of the rectrices being a little frayed, perhaps from being used as a brace against rocks while the bird was eating its prey.

The plumage of the adult, while perfect in appearance, was not complete. The primaries were all new and of full length, save the two distals. The outermost had not yet been molted, though it was in excellent condition, and the adjacent quill had barely broken from its sheath. All of the rectrices were apparently new, but the pair adjacent to the outermost were just breaking from their sheaths.

The plumage of the underparts of this specimen was soiled in appearance, this being due, I believe, to actual coloring of the feathers, for the specimen was thoroughly washed.

The lengths of the immature female, in inches, were: tarsus, 1.86; wing, 14.94; tail, 7.56; of the adult male: tarsus, 1.29; wing, 12.25; tail, 6.13.

State Board of Game Commissioners,
Harrisburg, Pa.

INDIVIDUALITY IN BIRD SONG*

BY LUCY V. BAXTER COFFIN

Since Darwin voiced the idea that the bird with the finest song was the choice of the female, the songs of birds have been discussed from various angles. Latterly has come the idea that a bird's song is a mark of his own individuality. From observations over several

*Read before the Chicago Ornithological Society, April 19, 1927.

years, I am convinced if we have discerning ears and are observant we will find that birds may be recognized by their voices as readily as human beings are.

In 1914, while at our Indiana farm, my attention was arrested by hearing a Song Sparrow give a song which called to my mind the opening bars of a familiar Scotch ballad. Bird songs had been of particular interest to me and I wondered why I had never before noticed that similarity in a Song Sparrow song, and I grew more attentive. Then I realized that of all the Song Sparrows on this farm no two sang alike. This broadened into the realization that every place I went I heard a different song—always recognizable as a Song Sparrow, but never the same song.

The next summer when we returned to The Brooks, we were again greeted by the Scotch ballad of the previous year; the same bird was still there. This brought the thought that individual birds can be recognized by the song. The recurrence of this song was so regular that we looked forward each season, on our return, to being greeted by an old friend.

The vegetation near the house at The Brooks is attractive to Song Sparrows, with shrubbery near a small brook running at the foot of the door yard, consequently each year a Song Sparrow nests near by. The Scotch bird was in this locality three summers, then we heard it no more. Its successor stayed four years, the longest period of residence of one bird thus far. One individual song has now been repeated with us the last two summers.

This winter I went back to The Brooks on the seventh of February, a soft-aired, sunshinny February day when we look expectantly for Bluebirds. On the way out to the farm Song Sparrows were singing. The question arose whether they had stayed in the same locality or were they more northerly birds that had moved down for the winter. This led to wondering whether the Song Sparrow of last summer would be heard at The Brooks. As I stepped out into the sunshine of the south porch, to my pleasure and interest the same song of last summer rang out into the sunshine. By the individual song of this bird I learned it had stayed in the same locality through the winter. It had been in this particular section of this particular farm for two summers and this winter. By its song we learned this.

Each Song Sparrow has more than one song. In my notebook for August 23, 1917, is entered:

"This particular Song Sparrow has three different songs. One day he seemed to be giving a lesson to one of the young; he sang, the young one made a crude effort; this was heard several days; at the end of the week, the young had formed a song, but not like that of the mature bird. Whether it was a conscious effort to teach or whether the young was trying to imitate must be conjectured."

Different songs seem to be used for different conditions. This sparrow uses its best and most sprightly song for its day-break song. If it sings it later, it is in a slower tempo and less ringing. Only a hard storm causes a Song Sparrow to cease singing. After a severe storm has passed, it bursts out with its most vigorous song.

While these observations were in progress in Indiana Mr. A. E. Saunders was also observing variation in bird songs, but more scientifically, in Connecticut, publishing his observations in the *Auk* of April, 1924. He records one Song Sparrow singing June 19, 23, and 24, 1922, later October 14, in a certain locality, and writes the following:

"A bird may remain in its summer locality and sing from its headquarters in October, after the mating season and post-nuptial season are over."

Other birds he mentions particularly are the Field Sparrow, Meadowlark, and Wood Thrush. The Field Sparrow and Meadowlark have also been observed at The Brooks. Last summer one Field Sparrow had an ecstatic song of thrills on five different notes. Another one always gave an ascending scale, and never sang the descending scale described by Chapman. One Meadowlark at The Brooks sang often in a particular apple tree. Its song was so unlike the usual Meadowlark song that not until I saw it was I certain of its identity.

Of the male and female Robins nesting near the house the alarm notes were perceptibly different. The male's was deeper and richer; hers was thin and high-pitched, quite suggesting hysteria. The Baltimore Oriole did not once sing the song formerly familiar—so familiar that by whistling it I always received a response from the bird. These observations over several years lead me to the conclusion that it is not the species alone but the individual bird as well that may be recognized by the song, and that a careful listener may learn more from the bird's song than has yet been realized.

At present there is no satisfactory way of recording these bird songs so they may be studied by others. Mr. Saunders has carefully worked out a graphic method, while Wheeler and Nichols use quite different ones, but neither of them can be vocalized by any one else. The natural scale and rhythm of the bird is not the tempered scale of the piano nor the conventional rhythm of our written music. This is

an unworked field in which some musician naturalist should make a study.

That the different call-notes and songs are prompted by different emotions is another phase. That crows have mentally evolved a language is not tenable, but that different circumstances and conditions bring forth different pitch and tone and quality of "caw" is undeniable.

That the nesting impulse is the sole cause of song cannot be the case. Never have I heard a fuller, more varied cardinal song than the one heard on the seventh of last February. We find many birds singing in September after the nesting and molting are past. There are resident species that are heard on fine days through the winter.

Again I refer to my notebook, July 17, 1915:

> "I have been much amused this afternoon by a young Blue Jay. It apparently was trying to learn the rhythmical call of the Blue Jay. It could make only a ludicrous gurgling raucous effort, then with seeming impatience shouted 'Jay! Jay!', moved to another perch and tried again. A young Robin went through a similar performance one day, but it was not quite so amusing."

These efforts certainly had no connection with nesting.

All of these are points for investigation and discussion.

Impelled by curiosity we observe, then we apply the faculty of reason, from which we deduce. Then again we observe and compare our observations with others. So we learn.

Impelled by our social instincts we are led to talk about our learning with others, and the natural reaction is a further desire to study.

But there are three pitfalls. We do not observe closely, we do not deduce carefully, and we do not talk accurately. As an East Indian saying reads: "Many things we think we know, more things we are told we know, and but few things *we know*."

We have standardized our color-scheme in ornithology. We have named each part of a bird's anatomy, but we have devised no symbols to convey to our associates an adequate description of bird-call and vocalization, in general.

Three different methods of recording have been tried: the graph, the dotted and dashed line, and the standard musical notation. None of these gives us, completely, pitch, quality, rhythm, melody, or time—or provide for throat, nose, lip, teeth or head tones.

Cannot some of our younger ornithologists develop this undiscovered necessity? Perhaps a new system of musical notation may be necessary—possibly the Chinese, with its center "four-square," with

four inter-notes, or the Gregorian five-tone scale. Our seven whole-tone tempered piano scale will never do, for it is not true. A large number of other scales are available. Possibly a battery of instruments must be selected. I suggest a xylophone, high pitch; the banjo, the zither, the metal piccolo, and the bassoons, to represent both column production and vibratory production.

Let me quote, in closing, from Henry Oldys, (*Auk*, Jan., 1916):

> "Adequate appreciation is not given by either naturalists or musicians to the fact that a number of problems, not inferior in importance to any to which ornithologists are devoting their energies, require for their solution careful and exhaustive study of the utterances of birds by competent musicians."

I am indebted to Mr. J. W. Magann, of Oak Park, Illinois, for the following comments on the subject of this paper:

Since the work done to make a written record of bird songs has hardly been successful, why should we not obtain a musical record of their songs? To a very limited extent this has been done. During the past two years we have seen a remarkable development in phonographs. This has largely been due to developments in radio being applied to phonograph recording and reproducing processes. The phonograph has been electrified.

I believe that it would be very much worth while if some institution or association with adequate financial support would thoroughly investigate the possibilities of the latest developments in phonograph recording in relation to the recording of bird songs. The equipment necessary would probably consist of a microphone similar to that used by every radio station, a telephone line to a convenient shelter, and in the shelter a radio amplifier and an electrical recorder.

The procedure would be to first determine the usual perch of the bird when singing. While the bird was away, the microphone could be concealed with leaves, grass, etc., and the telephone line run to the shelter. When the bird returned and started to sing, the music could be amplified until of the proper volume to be recordable. From one shelter a large number of microphones might be scattered in places where birds were known to sing.

After these authentic master records have been made, it should be very easy to insert explanations and comments so that the records may be used for instruction purposes in the schools. It would not take much more imagination to see the possibilities of the Vitaphone, which combines the motion picture and the phonograph, for the ornithological education of the school children of the future.

CHICAGO, ILLINOIS.

BIRDS OF EASTERN McKENZIE COUNTY, NORTH DAKOTA

BY ADRIAN LARSON

[Concluded from the WILSON BULLETIN, March, 1928, page 48]

CHIMNEY SWIFT. *Chaetura pelagica.* Rare. One was seen on September 8, 1916, and during the summer of 1923 a pair was seen in Charlson.

KINGBIRD. *Tyrannus tyrannus.* A very common summer resident, breeding. Every clump of trees seems to harbor a pair of Kingbirds during the summer. Average spring arrival, May 20 (nine years). Earliest spring arrival, May 12, 1915. Average fall departure, August 23 (ten years). Latest fall departure, September 13, 1917.

ARKANSAS KINGBIRD. *Tyrannus verticalis.* A common summer resident, breeding; less numerous, however, than *tyrannus.* Average spring arrival, May 18 (three years). Earliest spring arrival, May 10, 1919. Average fall departure, August 26 (two years). Latest fall departure, August 28, 1925.

SAY'S PHOEBE. *Sayornis sayus.* A common summer resident, breeding. This bird is common in the badlands, nesting in the crevices and on the stone ledges of the cliffs. It also frequents and nests about the old ranch houses. Through the summer it keeps up its persistent call of "*phoebe, phoebe,*" with occasional variation, but with tiresome monotony to one who is compelled to hear. Average spring arrival, April 24 (six years). Earliest spring arrival, April 14, 1921. Average fall departure, September 18 (three years). Latest fall departure, September 24, 1920.

TRAILL'S FLYCATCHER. *Empidonax trailli.* An abundant summer resident, nesting usually in growths of willows. Average spring arrival, May 24 (three years). Earliest spring arrival, May 21, 1921.

LEAST FLYCATCHER. *Empidonax minimus.* Common, but whether it breeds or not is uncertain. Average spring arrival, May 21 (two years).

SASKATCHEWAN HORNED LARK. *Otocoris alpestris enthymia.* I believe this bird can be considered the most common bird in the region. It nests early and late in the season.

HOYT'S HORNED LARK. *Otocoris alpestris hoyti.* This subspecies is occasionally found in the winter. February 24, 1926.

MAGPIE. *Pica pica hudsonia.* An abundant resident, breeding; not found far from timber or water, as a rule.

BLUEJAY. *Cyanocitta cristata.* I have never seen this bird here myself, but it has been reported by others, and I include it in the list

on that basis. There are plenty of oak trees near Charlson and near the buttes about twenty miles south of Charlson, and Bluejays should be found there. About forty or fifty miles south, in the Killdeer Mountains, Bluejays are common.

RAVEN. *Corvus corax principalis.* Rare. Recorded March 25, 1920, and November 9, 1920.

WESTERN CROW. *Corvus brachyrhynchos hesperis.* A common transient and summer resident. It is occasionally seen in mild winters. Average spring arrival, March 22 (twelve years). Earliest spring arrival, March 7, 1926. Average fall departure, October 18 (six years). Latest fall departure, December 6, 1923.

CLARKE'S NUTCRACKER. *Nucifraga columbiana.* Accidental. One was seen on August 16, 1919.

BOBOLINK. *Dolichonyx oryzivorus.* A common summer resident of the prairies, breeding; it is partial to the meadows. Average spring arrival, May 23 (six years). Earliest spring arrival, May 13, 1913. Average fall departure, September 5 (four years). Latest fall departure, September 18, 1912.

COWBIRD. *Molothrus ater ater.* A common summer resident, breeding. Average spring arrival, May 7 (eight years). Earliest spring arrival, May 3, 1918.

YELLOW-HEADED BLACKBIRD. *Xanthocephalus xanthocephalus.* A common summer resident, breeding. Average spring arrival, May 5 (seven years). Earliest spring arrival, April 30, 1921. Average fall departure, September 6 (three years). Latest fall departure, September 16, 1924.

RED-WINGED BLACKBIRD. *Agelaius phoeniceus* subsp.? A common summer resident, breeding. Average spring arrival, April 14 (ten years). Earliest spring arrival, March 31, 1925. Latest fall departure, October 19, 1924.

WESTERN MEADOWLARK. *Sturnella neglecta.* An abundant summer resident, breeding. Average spring arrival, March 29 (eleven years). Earliest spring arrival, March 18, 1921. Average fall departure, October 23 (ten years). Latest fall departure, November 2, 1917.

BALTIMORE ORIOLE. *Icterus galbula.* A tolerably common summer resident, breeding. It is more numerous in the cottonwood groves along the Missouri River. Average spring arrival, May 24 (five years). Earliest spring arrival, May 11, 1918. Only fall date, September 1, 1916.

Brewer's Blackbird. *Euphagus cyanocephalus.* A common summer resident, breeding. The Brewer's Blackbird, like the Rusty Blackbird, shows partiality to water, especially the prairie sloughs, during the fall migration. The nests of the Brewer's Blackbird which I have found were usually located in some briery tree, like the buffalo berry and wild plum. Average spring arrival, April 18 (nine years). Earliest spring arrival, April 12, 1925. Average fall departure, November 4 (eight years). Latest fall departure, December 6, 1923. The latest fall date varies from October 23, 1920, to December 6, 1923. I have heard others say that the bird sometimes remains throughout the winter.

Bronzed Grackle. *Quiscalus quiscala aeneus.* Rare. I saw it on June 2, 1920, and May 27, 1921. I do not know why the Bronzed Grackle is not found here; at Rice Lake, about sixty miles to the east, it is common, as it is also at Minot, about a hundred miles northeast.

English Sparrow. *Passer domesticus.* A common resident throughout this area. It was common in 1912, and doubtless became so much earlier.

Redpoll. *Acanthis linaria linaria.* A more or less regular winter visitor. Average fall arrival, November 17 (seven years). Earliest fall arrival, October 20, 1920. Latest fall arrival, January 6, 1914. Average spring departure, March 25 (eight years). Latest spring departure, April 21, 1917. Earliest spring departure, February 20, 1916.

Hoary Redpoll. *Acanthis hornemanni exilipes.* Rare. A small flock was noted at a feeding tray on February 2, 1917, and for a few days thereafter. Among other Redpolls the considerable amount of white on the Hoary Redpoll distinguished it from the common one.

Goldfinch. *Astragalinus tristis tristis.* A common summer resident wherever there are bushes, trees, or bull thistles, and breeding. Average spring arrival, May 25 (six years). Earliest spring arrival, May 17, 1925. Average fall departure, September 30 (four years). Latest fall departure, October 6, 1920.

Snow Bunting. *Plectrophenax nivalis nivalis.* Usually a regular winter visitor, but in some years it is rarely seen. In years of heavy snowfall these birds are exceedingly abundant, assembling in flocks of thousands at times. Their clear "chip" note may be heard sometimes during a blizzard throughout the night. Average fall arrival, November 15 (six years). Earliest fall arrival, October 18, 1917. Latest fall arrival, November 25, 1913. Average spring departure,

March 9 (ten years). Latest spring departure, April 30, 1921. Earliest spring departure, February 11, 1917.

Alaska Longspur. *Calcarius lapponicus alascensis.* A common transient, while a few are found during the winter. Specimens submitted to the U. S. Biological Survey were referred to the subspecies here listed. Average fall arrival, October 13 (thirteen years). Average spring departure, April 4 (six years). Latest spring departure, April 11, 1921. I have other dates on their arrival in the spring from the south, but they are too few to be of much value.

Chestnut-collared Longspur. *Calcarius ornatus.* A very common summer resident, nesting abundantly. It is one of our best songsters among the prairie sparrows, and prefers the natural prairies to the cultivated fields. Average spring arrival, April 10 (ten years). Earliest spring arrival, March 25, 1920. Average fall departure, September 24 (five years). Latest fall departure, October 14, 1912.

McCown's Longspur. *Rhynchophanes mccowni.* A summer resident, breeding, though far less common than the Chestnut-collared. Average spring arrival, April 18 (six years). Earliest spring arrival, April 9, 1917. No fall migration records.

Western Vesper Sparrow. *Pooecetes gramineus confinis.* With the possible exception of the Horned Lark this sparrow is the commonest bird to be found here during the summer, nesting abundantly. It is distributed quite evenly throughout the area, except in the heavily timbered parts. It is to be found commonly along the roads. The white outer tail feathers afford a conspicuous field mark, and their sweet song is in marked contrast to their dull plumage. Average spring arrival, April 24 (ten years). Earliest spring arrival, April 15, 1925. Latest spring arrival, April 30, 1918. Average fall departure, September 30 (six years). Latest fall departure, October 23, 1925.

Western Savannah Sparrow. *Passerculus sandwichensis alaudinus.* A very common summer resident, breeding. Earliest spring arrival, May 4, 1924. Migration data meager.

Baird's Sparrow. *Ammodramus bairdi.* A tolerably common summer resident, breeding. Average spring arrival, April 25 (two years). Latest fall departure, October 21, 1924.

Western Grasshopper Sparrow. *Ammodramus savannarum bimaculatus.* A tolerably common summer resident, breeding. It is often found on the grassy hillsides where there is a sparse growth of

silverberry and buck brush. Average spring arrival, May 17 (three years). Earliest spring arrival, May 11, 1921.

WESTERN HENSLOW'S SPARROW. *Passerherbulus henslowi occidentalis.* A tolerably common summer resident; it is usually to be found around marshes, and probably breeds. Date of spring arrival, May 20, 1924.

The Western Henslow's Sparrow, the Western Grasshopper Sparrow, Baird's Sparrow, and the Western Savannah Sparrow are all so much alike that it is difficult to secure accurate migration records which are more than guesswork. But it is safe to say that all four species are pretty well distributed throughout the area, the Henslow's being limited, of course, to the vicinity of the sloughs.

NELSON'S SPARROW. *Passerherbulus nelsoni nelsoni.* A very rare bird, I think. On May 25, 1924, I observed one feeding along a willow-grown margin of a bayou of the Missouri River. At the first notice of it I took it to be a Palm Warbler, but upon closer inspection it proved to be a Nelson's Sparrow.

WESTERN LARK SPARROW. *Chondestes grammacus strigatus.* This is another remarkable songster of the sparrow tribe, which frequents the badlands and the hot valleys. It will be found near sage brush. This sparrow is very common in some localities and entirely absent in others. Average spring arrival, May 18 (eight years). Earliest spring arrival, May 6, 1920. Average fall departure, August 27 (five years). Latest fall departure, September 9, 1924.

HARRIS'S SPARROW. *Zonotrichia querula.* A tolerably common transient. Average spring arrival, May 9 (eight years). Earliest spring arrival, May 5, 1913. Latest spring arrival, May 12, 1920. Average spring departure, May 19 (three years). Latest spring departure, May 27, 1917. Average fall arrival, September 25 (four years). Earliest fall arrival, September 16, 1923. Average fall departure, October 16 (four years). Latest fall departure, October 29, 1919.

WHITE-CROWNED SPARROW. *Zonotrichia leucophrys leucophrys.* A tolerably common transient. Average spring arrival, May 6 (eight years). Earliest spring arrival, May 2, 1913. Latest spring arrival, May 10, 1923. Average spring departure, May 15 (three years). Latest spring departure, May 17, 1913. Average fall arrival, September 23 (four years). Earliest fall arrival, September 16, 1916. Average fall departure, October 2 (four years). Latest fall departure, October 7, 1921.

GAMBEL'S SPARROW. *Zonotrichia leucophrys gambeli.* A tolerably common transient, which is to be distinguished from *leucophrys* by the whitish lores. A specimen has been submitted to the U. S. Biological Survey. Average spring arrival, April 25 (two years). Earliest spring arrival, April 20, 1925. Average spring departure, May 7 (two years). Latest spring departure, May 10, 1920. During the fall of 1924 it was observed from September 14 to October 13.

WHITE-THROATED SPARROW. *Zonotrichia albicollis.* A tolerably common transient, but less numerous than *querula, leucophrys* or *gambeli.* Average spring arrival, May 10 (four years). Earliest spring arrival, May 2, 1920. Average fall arrival, September 18 (three years). Earliest fall arrival, September 14, 1924. Latest fall departure recorded, October 13, 1924.

The young of *leucophrys, gambeli,* and *albicollis* in the fall present quite a problem in accurate field identification.

WESTERN TREE SPARROW. *Spizella monticola ochracea.* A very common transient, but it does not winter here. Average spring arrival, March 20 (eleven years). Earliest spring arrival, February 27, 1921. Average spring departure, April 24 (nine years). Latest spring departure, May 6, 1924. Average fall arrival, September 30 (Seven years). Earliest fall arrival, September 21, 1919. Average fall departure, October 17 (six years). Latest fall departure, November 16, 1919.

WESTERN CHIPPING SPARROW. *Spizella passerina arizonae.* A very common transient; I have found no evidence of its breeding in this area. Average spring arrival, May 12 (four years). Earliest spring arrival, May 4, 1924.

CLAY-COLORED SPARROW. *Spizella pallida.* A very common summer resident, breeding; and frequenting the brushy prairie. Average spring arrival, May 10 (seven years). Earliest spring arrival, May 8, 1913. Latest spring arrival, May 16, 1917. Average fall departure, September 14 (eight years). Latest fall departure, October 4, 1924.

WESTERN FIELD SPARROW. *Spizella pusilla arenacea.* Rare. I have found it in only one locality, namely, on a hillside close to the badland breaks, and in a sparse growth of buck brush, wild gooseberry bushes, etc. Here there were two pairs, and the males were singing lustily on every occasion that I could visit the place.

SLATE-COLORED JUNCO. *Junco hyemalis hyemalis.* A very common transient. Average spring arrival, April 4 (nine years). Earliest spring arrival, March 21, 1918. Latest spring arrival, April 17, 1914.

Average spring departure, May 5 (six years). Latest spring departure, May 13, 1918. Earliest spring departure, April 24, 1921. Average fall arrival, September 27 (seven years). Earliest fall arrival, September 8, 1917. Latest fall arrival, October 30, 1919. Average fall departure, October 17 (six years). Latest fall departure, November 16, 1919. Earliest fall departure, September 25, 1912.

Montana Junco. *Junco hyemalis montanus.* It is sometimes seen in migrations, e. g., May 1, 1921.

Dakota Song Sparrow. *Melospiza melodia juddi.* A common summer resident, breeding. Average spring arrival, April 14 (eight years). Earliest spring arrival, March 28, 1918. Average fall departure, October 20 (five years). Latest fall departure, November 8, 1919.

Lincoln's Sparrow. *Melospiza lincolni lincolni.* A common transient. Average spring arrival, May 2 (four years). Earliest spring arrival, April 29, 1925. Average spring departure, May 21 (three years). Latest spring departure, May 30, 1924. The fall migration is from September 14 to 30 (1924).

Arctic Towhee. *Pipilo maculatus arcticus.* A very common summer resident, breeding; and is found almost wherever there is brush and timber. This bird can give a good many variations of its simple song. Average spring arrival, May 3 (ten years). Earliest spring arrival, April 24, 1913. Average fall departure, October 7 (four years). Latest fall departure, October 10, 1924.

Black-headed Grosbeak. *Hedymeles melanocephalus.* A tolerably common summer resident, breeding. Average spring arrival, May 26 (three years). No fall records.

Lazuli Bunting. *Passerina amoena.* An uncommon summer resident, which shows a partiality for willows. Average spring arrival. June 4 (two years). Latest departure, August 8, 1920.

Dickicssel. *Spiza americana.* A rare and irregular summer resident. It was common only in the year 1921.

Lark Bunting. *Calamospiza melanocorys.* An abundant summer resident, breeding abundantly. A bird of the native prairie and companion of the Chestnut-collared Longspur, and a beautiful singer. Average spring arrival, May 19 (ten years). Earliest spring arrival, May 13, 1915. Average fall departure, August 22 (three years). Latest fall departure, August 30, 1920.

SCARLET TANAGER. *Piranga erythromelas.* Very rare. One was seen on May 24, 1921.

PURPLE MARTIN. *Progne subis subis.* Rare. A pair was seen in Charlson on May 27 and June 25, 1921.

CLIFF SWALLOW. *Petrochelidon lunifrons lunifrons.* A tolerably common summer resident, breeding. Average spring arrival, May 22 (four years). Average fall departure, August 23 (two years).

BARN SWALLOW. *Hirundo erythrogaster.* A common summer resident, breeding. Average spring arrival, May 19 (nine years). Earliest spring arrival, May 9, 1919. Average fall departure, September 16 (seven years). Latest fall departure, September 25, 1925.

TREE SWALLOW. *Iridoprocne bicolor.* Rare. One was seen on August 24, 1925.

BOHEMIAN WAXWING. *Bombycilla garrula.* An irregular winter visitor, exceedingly abundant in some years. During the years of abundance they are always to be found about the juniper trees in the badlands; they are also very fond of the red haws and buffalo berries. Average fall arrival, November 22 (five years). Earliest fall arrival, November 10, 1919. Average spring departure, March 12 (eight years). Latest spring departure, April 10, 1921. Earliest spring departure, February 16, 1917.

CEDAR WAXWING. *Bombycilla cedrorum.* An uncommon summer resident, breeding. It usually nests in the cedars in the badlands. Earliest spring arrival, May 6, 1919.

NORTHERN SHRIKE. *Lanius borealis.* An irregular winter visitor. Average fall arrival, October 29 (nine years). Earliest fall arrival, October 16, 1919. Average spring departure, March 15 (four years). Latest spring departure, March 23, 1914.

WHITE-RUMPED SHRIKE. *Lanius ludovicianus excubitorides.* A tolerably common summer resident, breeding. It generally selects a tall, lone cottonwood for a nesting site. Average spring arrival, April 27 (five years). Earliest spring arrival, March 25, 1918. Average fall departure, October 3 (four years). Latest fall departure, October 27, 1912.

RED-EYED VIREO. *Vireosylva olivacea.* A common summer resident wherever there are trees, breeding. Average spring arrival, May

29 (four years). Earliest spring arrival, May 25, 1921. Latest fall departure, August 31, 1924.

Warbling Vireo. *Vireosylva gilva.* A tolerably common summer resident, breeding. Having taken no specimens I do not know whether the subspecies is *gilva* or *swainsoni.* Average spring arrival, June 1 (two years).

Black and White Warbler. *Mniotilta varia.* An uncommon but regular transient; a few may nest. Average spring arrival, May 13 (four years). Earliest spring arrival, May 6, 1921. August 29, 1920, is the only fall date.

Tennessee Warbler. *Vermivora peregrina.* An uncommon transient. Average spring arrival, May 21 (two years). Latest spring departure, May 30, 1921.

Orange-crowned Warbler. *Vermivora celata celata.* A common transient; may be considered the commonest warbler migrant. Average spring arrival, May 7 (two years). Fall dates, September 14-28 (1924).

Yellow Warbler. *Dendroica aestiva aestiva.* A very common summer resident, breeding. Average spring arrival, May 18 (eight years). Earliest spring arrival, May 13, 1917. Average fall departure, August 26 (four years). Latest fall departure, September 5, 1918.

Magnolia Warbler. *Dendroica magnolia.* An uncommon transient. Average spring arrival, May 27 (two years). Latest spring departure, May 30, 1924.

Myrtle Warbler. *Dendroica coronata.* A regular and common transient. Average spring arrival, May 1 (six years). Earliest spring arrival, April 21, 1921. Average spring departure, May 15 (six years). Latest spring departure, May 26, 1918. Average fall arrival, September 20 (four years). Earliest fall arrival, September 14, 1916. Average fall departure, October 8 (two years). Latest fall departure, October 11, 1913.

Black-poll Warbler. *Dendroica striata.* A common transient. Average spring arrival, May 18 (four years). Average spring departure, May 26 (four years). Latest spring departure, May 30, 1924.

Oven-bird. *Seiurus aurocapillus.* A tolerably common summer resident of the brushy coulees, breeding. Average spring arrival, May 27 (two years).

GRINNELL'S WATER-THRUSH. *Seiurus noveboracensis notabilis.* A common transient, possibly breeding. Average spring arrival, May 14 (four years). Earliest spring arrival, May 9, 1921.

WESTERN YELLOW-THROAT. *Geothlypis trichas occidentalis.* A common summer resident, breeding. Average spring arrival, May 24 (five years). Average fall departure, September 17 (two years). Latest fall departure, September 30, 1924.

LONG-TAILED CHAT. *Icteria virens longicauda.* A common summer resident in the chaparral, breeding. Average spring arrival, May 26 (seven years). Earliest spring arrival, May 22, 1923. Average fall departure, September 3 (three years). Latest fall departure. September 15, 1924.

REDSTART. *Setophaga ruticilla.* A common transient and less common summer resident, breeding. Average spring arrival, May 25 (two years).

PIPIT. *Anthus rubescens.* A common transient. Average spring arrival, April 26 (three years). Average spring departure, May 4 (two years). Earliest fall arrival, September 24, 1925. Average fall departure, October 16 (two years).

SPRAGUE'S PIPIT. *Anthus spraguei.* A rare summer resident. I found a dead specimen caught in some barbed wire. Latest fall departure, August 25, 1920.

CATBIRD. *Dumetella carolinensis.* A common summer resident, breeding. Average spring arrival, May 24 (six years). Earliest spring arrival, May 17, 1918. Average fall departure, September 12 (six years). Latest fall departure, September 18, 1912.

BROWN THRASHER. *Toxostoma rufum.* A common summer resident, breeding. Average spring arrival, May 12 (nine years). Earliest spring arrival, May 9, 1920. Average fall departure, September 14 (five years). Latest fall departure, September 19, 1917.

ROCK WREN. *Salpinctes obsoletus obsoletes.* A common summer resident in the badlands, breeding. Earliest spring arrival, May 10, 1920. Latest fall departure, September 19, 1917.

WESTERN HOUSE WREN. *Troglodytes aedon parkmani.* A common summer resident, breeding. Average spring arrival, May 22 (seven years). Earliest spring arrival, May 12, 1920. Average fall departure, September 6 (five years). Latest fall departure, September 15, 1916.

Prairie Marsh Wren. *Telmatodytes palustris iliacus.* A common summer resident of the marshes, breeding. Latest date of fall departure, September 16, 1923.

Red-breasted Nuthatch. *Sitta canadensis.* A not common transient, possibly breeding. Earliest spring arrival, May 4, 1919.

Long-tailed Chickadee. *Penthestes atricapillus septentrionalis.* A common resident, breeding.

Ruby-crowned Kinglet. *Regulus calendula calendula.* An uncommon transient, though sometimes common. Earliest spring arrival, April 23, 1920. Latest spring departure, May 22, 1924. Fall dates, September 28-29 (1920).

Willow Thrush. *Hylocichla fuscescens salicicola.* An uncommon transient. May 18, 1924.

Gray-cheeked Thrush. *Hylocichla aliciae aliciae.* An uncommon transient. May 18 to June 8 (1924).

Olive-backed Thrush. *Hylocichla ustulata swainsoni.* A common transient. Average spring arrival, May 18 (two years). Average spring departure, June 1 (two years).

Hermit Thrush. *Hylocichla guttata pallasi.* A rare transient. One was seen on May 11, 1913.

Robin. *Planesticus migratorius migratorius.* A common summer resident, breeding. Average spring arrival, April 6 (nine years). Average fall departure, October 20 (eight years). Latest fall departure, November 2, 1917. Occasionally Robins are found throughout the winter among the junipers in the badlands; they are very fond of juniper berries, buffalo berries, and red haws. The Western Robin (*propinquus*) is sometimes seen, if the lack of white spots in the tail is a determining character.

Bluebird. *Sialia sialis sialis.* An uncommon summer resident, breeding. Average spring arrival, March 24 (two years). Latest fall departure, October 27, 1924.

Mountain Bluebird. *Sialia currucoides.* A common resident in the badlands, breeding. Average spring arrival, March 26 (five years).

Sioux Falls, South Dakota.

THE WILSON BULLETIN

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The present editorial organization is as follows: T. C. Stephens, Editor-in-Chief, Sioux City, Iowa; Myron H. Swenk, University of Nebraska, Lincoln, Nebraska; Wm. I. Lyon, Waukegan, Illinois.

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EDITORIAL

The annual meeting of the Wilson Orinthological Club will be held this fall at Ann Arbor, Michigan. The dates have not been fixed, but the Friday and Saturday following Thanksgiving Day are being considered. It is now expected that the Inland Bird Banding Association may meet at the same time and place.

In the last March issue the two full page plates in the body of Mr. Sawyer's article on the Courtship of Barrow's Golden-eye should have been interchanged. The one marked No. 2 should have been No. 3, and vice versa. On page 8, line 15, the figures referred to should have been 10-11, Plate 2 as corrected. On page 8, line 17, the figures referred to are 6-9 of Plate 2, as corrected. Such errors are vexing, and we are sorry.

The suggestion comes from Mr. Frank C. Pellett that an ornitholigical library be established by the Wilson Ornithological Club. The plan would be to place the collection of books in some large, centrally-located institution on terms to be mutually agreed upon. We are informed that the bee-keepers have established a similar library on bee culture at the University of Wisconsin. The books are gathered from the members by donation and bequest. Occasionally an entire private library may be thus contributed. The middle west has very few extensive collections of literature in the field of ornithology—either public or private; and perhaps none adequate for research.

It might even be possible to encourage the establishment of two or three such libraries; one main library, centrally located, and one or two subsidiary libraries to which duplicate material might be sent. The central and main collection might well be located in Chicago, or at the University of Illinois, Wisconsin, Iowa, or Michigan. There should be one in the south, at Nashville or St. Louis, for instance. And one should be established in the west, possibly at the University of Kansas or Nebraska.

Once a depository is selected, it would be expected that the members of the W. O. C. would do what they could to build up a library by donation. The books would probably become the property of the institution housing them. But, on the other hand, the collection could be designated by a name, and be subject to circulation among the members of the organization. At any rate, perhaps the ideas here suggested merit investigation.

Several of our readers have shown enough interest in the life list idea to send in their reports. These reports start out in rather large figures and are based on extensive travels. The totals thus far reported immediately exclude nearly all observers whose field work is limited to their own local regions. We do not wish to do this. We would like to see the local observers take an interest and pride in their total lists also. There can be no harm in a little competition.

Suppose, then, that we arbitrarily divide our life lists into two classes, which we may call General and Local. Let us define General Life Lists as those without any limitations as to time or space. One may combine into one list the results of one's work in as many localities as possible. One or two of these life lists have been reported in summary in our pages, and we will be glad to continue them.

A Local Life List is restricted in space, at least. It is limited to accommodate the observer who does not travel, but who does intensive field work at his home station. We believe it is worth while for the observer to keep his notebook records; and to know how many birds he has on his life list; and to take some pleasure in adding a new one from time to time—always with deliberation and scientific accuracy, of course.

In order to stimulate interest and to learn of each other's results, we propose a contest as to Local Life Lists. Let those who will, compile their lists and submit them. First, however, let us have suggestions as to the rules which should govern such a contest. How much of an area is to be allowed? Should it be a political area or an ecological area? Shall there be prizes, and who will offer them? If the matter is taken up we will hope to make a complete announcement in our next issue.

Let us also remember that this is play-work, but that it is enjoyable and instructive and stimulative, and can do no harm. If it does no more than encourage some of our luke-warm members to spend a little more time in the field in an effort to increase their life lists, the scheme will be justifiable.

GENERAL NOTES

Conducted by M. H. Swenk

Some Oregon Records.—The following records of birds taken at Scio, Oregon, may be of interest, and I am therefore placing them on record.

Yellow Rail (*Coturnicops noveboracensis*).—A male, taken February 1, 1900. The only record for the state.

Black Pigeon Hawk (*Falco columbarius sucklcyi*).—A female, taken November 1, 1922.

Northern Spotted Owl (*Strix occidentlais caurina*).—A male, taken November 1, 1924. The female was seen but not secured.

Gray Gryfalcon (*Falco rusticolus*).—A male, May, 1925.—A. G. Prill, *Scio, Oregon.*

Who Banded This Bird?—Late in December, 1927, a local gunner came to my office one day with a hawk's leg, on which was an aluminum band. He said that a local mutual friend had sent him to me to find out what it was put there for, and by whom.

The dried foot and leg, up to the knee joint, proved to be that of the Marsh Hawk (*Circus hudsonius*). The man taking this bird had killed it sometime during November, 1927, while out hunting Mourning Doves, in Broward County, Florida. He did not remember the exact date. On the outside of the band, are the initials—"A. F. M., CoKato, Minn."; while on the inside of the seemingly homemade band is printed "Stalls white laundry soap."

Let us hear from any one knowing who banded this bird, or who might know some man in Minnesota by those initials.—HAROLD H. BAILEY, *Miami, Fla.*

Another Bird "Life List."—Noting the editorial on this subject in the December number of the WILSON BULLETIN, and the question as to "who has the longest life list," I will report in regard to mine. I have always been interested in keeping a list of the birds seen in life during my various travels, and I believe that I have quite a large list.

I have seen and identified in life, in North America, 528 species and 190 subspecies, making a total of 718 birds. The subspecies were either actually collected or were in localities where there could be no possible doubt as to their identity. Most of them were collected.

In addition to this I have found the nests, identifying eggs or young, of 410 species and subspecies.

I shall be interested to know what figures are presented by others on this subject.—A. C. BENT, *Taunton, Mass.*

The Arkansas Kingbird in Florida.—Records of the Arkansas Kingbird (*Tyrannus verticalis*) are not so common for Florida that publication of another one would seem to be amiss. On the afternoon of November 18, 1927, I took a friend out about sixteen miles west of Miami, Dade County, to show him some stub end canals, with the possibility of finding some alligators there for him, and some birds for me. Birds were, however, very scarce, and with the exception of the Killdeer and a few Great Blue Herons, nothing was seen. We did, however, find an old "gator" with some young, in each stub canal, but as it was growing dark, and he wanted the "gators" alive, nothing was shot. The next morning, November 19, my friend returned without me with a net for the capture of the young "gators," and a .22 calibre rifle in case he should see anything that might interest me.

That afternoon he called me up by phone, and informed me that he had a Crested Flycatcher for me, and that he would bring it to the office if I cared for it, but that it was badly shot up by the .22 calibre bullet. Imagine my surprise, to find on his arrival, that the bird was not a Crested Flycatcher but an Arkansas Kingbird. After working over an hour on the bird that night, I managed to make a very fair skin of it, and it is now in the B. C. N. H. On dissection, it proved to be an adult female, with breast feathers missing and with breast skin flabby, as though it had just lately been brooding. It was very fat. Just why this bird should have been in this condition, how far it was from its actual breeding habitat, and why it was down in Florida, I am at loss to hazard a guess.—HAROLD H. BAILEY, *Miami, Fla.*

More Arkansas Kingbirds in Florida.—Since reporting the capture, on December 19, 1927, of *Tyrannus verticalis* in Florida, I have taken another specimen. This second specimen was taken at the outskirts of the city limits of Miami, on January 15, 1928.

While driving in from the "glades," I saw two birds perched on the telephone wires bordering the highway, and after passing them some hundred yards, I backed up and secured one, after both had descended into a newly burnt-over orchard. There were many migrant Robins feeding on the ground at the time, and the other Kingbird flew off with them when I shot..

The bird secured proved to be an adult female, in rather poor plumage, and is now number 3906 B. C. N. H.

The further report of a bird of this species having been seen on Sanibel Island, Florida, leads me to believe that the Arkansas Kingbird should now be classed as a rare winter migrant, instead of a straggler.—HAROLD H. BAILEY, *Miami, Fla.*

Scarcity of the House Wren at McMillan, Michigan.—The House Wren (*Troglodytes aedon*) continues to be a very much discussed species, since in many parts of the country it has been found to destroy the nests and eggs of other species of birds. On this account, many persons are taking down the houses which they had erected purposely for the House Wren. In a past number of the WILSON BULLETIN I gave a report of the House Wren and others nesting in my bird houses here in Luce County, near McMillan.

From May 19, 1925, to August 1, 1927, no one was at this place, and the birds using the houses had to "protect themselves." No English Sparrows had nested in any bird house up to that date (May 19, 1925) as they were kept trapped and destroyed. At the time of leaving in 1925, I made no change in the houses, there being some for the Purple Martins, Tree Swallows, House Wrens and Bluebirds. The first thing that I undertook on my return, on August 1, 1927, was to see if any great changes had occurred.

The English Sparrow had increased, but the Purple Martins, Tree Swallows and Bluebirds met with a great decrease in the number of families, and there were no House Wrens at all. It is certainly a good thing that I had some bird houses made purposely for the House Wren, or the English Sparrows would have had these filled up with nests, and therefore they would have had a much bigger army and more, or all, of the other birds would have been forced out. Nearly every house for Bluebirds or Tree Swallows, and some of the Purple Martin houses, had an English Sparrow's nest in it. But all of the houses erected for the House Wrens were entirely empty, showing that none were present during these years. I made no effort to destroy the House Wrens, and it has been my experience that the species nesting at the houses which I have up for their use are safer when the House Wren is present than they are with the English Sparrow. It is now four years since the House Wren used any of my houses. And during the time that I was away, the English Sparrows came and were in larger numbers than all the other species combined.—O. M. BRYENS, *McMillan, Mich.*

A Curious Flight of Nighthawks.—On September 3, 1926, I witnessed a flight of Nighthawks which I regard as the most curious sight that I have seen in two score years of bird study.

I live on a farm in Greene County, Ohio, about midway between Columbus and Cincinnati. On that particular day I had spent much of the afternoon in the center of a strip of woods, watching the squirrels, but at about 3:30 P. M. I moved my position to the west margin of the woods, where I could rest on a large log and have a good view of the sky. South of my position there is another

strip of timber which meets the woods I was in, forming nearly a right angle, or a reversed L. I was looking across the open angle of the L and towards the south. I had no sooner taken this position than I saw four Nighthawks rising over the crest of the woods to the south and flying directly north. The four birds were in a line extending from east to west, with fifty or seventy-five yards separating one bird from the next. No sooner had these four birds disappeared, northward, than four more Nighthawks arose over the brow of the woods, in the same formation and following the first line. Then as these four disapperaed in the north, a third line came on.

I now sat up and took notice. Something unusual was happening. I looked off to the west, beyond the woods, and I beheld Nighthawks at irregular intervals as far as my sight would carry. Briefly, I watched these lines coming for half an hour, like a great invading army. Tiring at length of the sight, I concluded to go to the house. How long the birds continued to come after I ceased to observe them, or how long they had been coming before I noticed them, I cannot say. In the half hour that I watched, some 300 Nighthawks, approximately, had passed nearly over my head.

Had these birds been going southward, I would have supposed I was witnessing a great Nighthawk migration. But why north? On September 14, 1926, I saw a group of about two dozen Nighthawks, also flying northward. On September 16 a smaller flock of about fifteen was seen flying south. On September 17 and 18 a few were observed feeding in the afternoons, but on the 19th the sky was entirely cleared of Nighthawks, and none were seen later.—Thomas M. Earl, *Xenia, Ohio.*

The Abundance of Woodpeckers and Other Birds in Northeastern Louisiana.—Following the meeting of the Wilson Ornithological Club at Nashville, I spent five days in northeastern Louisiana, in a region that was overflowed last May. January 1 to 4 was the coldest period of that length that men who had lived there for many years could recall. Early morning temperatures were 14°, 14°, 13°, and 32° F. On January 5 the temperature rose from 18° to 45°. Every day was sunny. My host, Robert Oldham, thinks that land birds were more numerous than in any previous winter. Exceptions are Robins, Blackbirds and Mourning Doves. Large numbers of Mourning Doves were shot last winter for food. Some of the residents do not hesitate to shoot any kind of a bird. I saw one lad shoot at a Mockingbird, in spite of my protests. Forty Bob-whites were killed by two men in one day while I was there.

For miles in all directions from Mr. Oldham's home extends a hardwood forest in which lumbering on a large scale has been carried on for several years. Over much of this forest the fallen tree tops left by the timber cutters, together with the undergrowth, have been burned by forest fires, which killed a large part of the trees that had been left standing. There are likely more woodpeckers here than in any other equal area in the world. I do not know any other region in this country where so much hardwood was still standing until recent years. Here I used to see Ivory-billed Woodpeckers, but not for the past ten or twelve years, although a man told me that he saw one in the Bayou Mason swamp in 1926.

Of Pileated Woodpeckers Mr. Oldham and I think that a hundred are living within two miles of his house. The number of these great hewers of wood which I saw was about eight, with a possibility of some duplications, but I was outside only about twelve hours altogether. Of smaller woodpeckers we estimated one

to the acre, although this estimate may be quite too small or too large. In West Carroll Parish, where I was staying, there may be more than one hundred thousand of these birds. Of these, the Red-headed Woodpecker was apparently the most common; but, if it were not so conspicuous, it might be noticed not much oftener than the Red-bellied Woodpecker, which could be heard much of the time. Flickers, although less numerous, are as common as I have seen them anywhere. I noticed about nine Yellow-bellied Sapsuckers. Hairy and Downy Woodpeckers are less numerous. Mr. Oldham complained about the woodpeckers picking into the ends of the unripe ears of corn.

Blue Jays were rather common, and a few Crows were heard. Of Meadowlarks I saw nearly a hundred in one field; of blackbirds about a thousand in one flock flying to roost, and on other days smaller flocks, perhaps made up of part of the one large flock. In these flocks all that I could see plainly were Bronzed Grackles. I saw only one Red-winged Blackbird this winter, but about forty were seen when I visited the same district three years ago. I did not notice any Rusty Grackles on my recent visit.

If I had had field glasses, I could have identified more sparrows. Large flocks of White-throated Sparrows were seen, altogether probably five hundred; of Slate-colored Juncos, three or four hundred; Cardinals, about 30; Towhees, about 12; Vesper Sparrows, 3; Lincoln's Sparrow, 1; and Field Sparrow, 1. I saw a dozen or more Field Sparrows on January 2, 1925.

Other birds, with approximate numbers seen and heard, were: Mallard, one flock of about 23, January 5; Red-shouldered Hawk, 3; Red-tailed Hawk, 2; Sparrow Hawk, 4; Barred Owl, 2; Turkey Buzzard, a few; Black Vulture (a flock of 15 before I arrived); Killdeer, 12; Phoebe, 1, (three years ago, 11); Migrant Shrike, 2; Myrtle Warbler, 1, (three years ago I saw in the same district about 30 Myrtle Warblers); Mockingbird, 10; Brown Thrasher, 8; Carolina Wren, 5; Bewick's Wren, 2; Tufted Titmouse, 10; Carolina Chickadee, 10; White-breasted Nuthatch, 1; Ruby-crowned Kinglet, 6; Hermit Thrush, 16; Robin, 4; Bluebird, 14.—E. L. Moseley, *Bowling Green, Ohio.*

Ground-nesting of the White Ibis.—In Mr. Arthur C. Bent's splendid book on the Marsh Birds, he mentions nothing about White Ibis nesting on the ground. It seems strange that with all his extensive excursions and numerous notes on this species that this habit was not noted by someone. However, if it has not been noted, such is what keeps ornithologists constantly seeking for further knowledge, and indicates that the ground-nesting habit must be rare among this species.

On April 27, 1922, Fred Walker and the author visited a small colony of White Ibis, which were nesting in a small clump of bay trees, covering perhaps a quarter of an acre, situated in a small grass pond, surrounded by pine and oak timber, on what could be described as flat-woods land, in the western part of Orange County, Florida. There was an occupied farm house 400 yards from the colony, and a sandy road fairly well traveled between the house and the pond, and brooding birds could plainly be seen against the green bay leaves. There were three small islands, and the birds used two of them. Green, Louisiana, Little Blue and several Ward's Herons, also the Snowy Egret and Water Turkey, were nesting in considerable numbers, with nests containing eggs in all stages of incubation, and many young.

Upon approaching the Ibises they rose with gruntal noises and circled around over the nest-clump. When we entered it they flew to a tall dead pine tree on the shore and sat silently watching. Occasionally a few came circling around while we were examining the nests. There were about forty or fifty pairs breeding, and all were in the *full adult* plumage. The nests were placed on the slender branches, or against the trunk of the tree. Some held only one nest and others four or five, from ten feet to twenty-five feet above the ground.

Four or five nests were made of green bay twigs with leaves intact, and a few dead twigs, *placed upon the ground*, among roots at the bases of trees. Both islands harbored ground nests. I have sets now in my collection taken from this colony that were from these ground-nests. None of the nests held young, but some of the eggs were incubated about two weks. From one fresh egg to three were found, the latter being the largest number.

It has always been a mystery to me why such a large bird builds so small a nest. Some nests are no larger than the hand of a large man in width, and with scarcely any depression. Although a few nests are quite appropriate and approach the size of an ordinary Little Blue Heron's nest, they can be told by their compactness, caused by layers of leafly twigs broken off living trees.

I was told by Mr. Redding, my guide, an old alligator hunter, of a place on the St. John's River Marshes, near Lake Washington, Brevard County, Florida, where the birds nested in an immense colony of several thousand birds, in the saw-grass and on the ground. This colony bred there in 1924. Mr. Redding stated that they arrived in large flocks and broke down the saw-grass with their weight until it appeared like a steam roller had run over the place for several acres in area. Here they built their nests upon the matted saw-grass, and among the saw-grass that remained upright. I myself have never been able to go to this place, but feel perfectly justified in accepting his statement, as he was well acquainted with their usual habits of tree nesting, and had no object in telling me anything but facts. I have visited several other breeding places of the White Ibis, but these are the only two instances where I found or heard of them making ground-nests.

Mr. Bent mentions the fact that he has not found White Ibis nesting on islands in salt water and that they resort to fresh water to nest. It might be well for me to mention a colony found on an island in Lake Worth two miles south of Palm Beach, on March 28, 1927. This is quite salty and the neck of land between the colony and the Atlantic Ocean was not over a half mile. On this date the birds were just beginning to nest; only a few had laid sets of three, and all were fresh. Other species nesting were hundreds of Black-crowned Night Herons with young fully feathered, Louisiana, Little Blue and Green Herons, and a few Snowy Egrets. The island was within 200 yards of a number of fine houses, and motor boats passed in numbers daily quite close. On the day I was there a noisy hydroplane passed over the island. There were no ibis nests found upon the ground, but they were built close together in vine-covered trees, in Mangroves, and three were found built against the trunk of a palm tree supported by the dead cabbage "boots" which had broken off and left six or eight inch stubs standing at an angle of 45 degrees.

In all the White Ibis colonies that I have seen I have never observed any but full-plumaged birds about, and I do not believe that they nest until they are fully matured.—Donald J. Nicholson, *Orlando, Fla.*

ORNITHOLOGICAL LITERATURE

BIRDS OF MASSACHUSETTS AND OTHER NEW ENGLAND STATES. By Edward Howe Forbush. Part II, Land Birds from Bob-whites to Grackles. Issued by authority of the [Massachusetts] Legislature, 1927, and distributed by the Secretary of the Commonwealth (Room 118, State House, Boston). Pp. i-l+1-461. Col. Pls., 28; halftone figs., 33; maps, 18; text figs., 34. Price $5.00.

This volume continues the work begun two years ago under the same auspices, and which was reviewed in the WILSON BULLETIN at the time (XXXVIII. 1926, pp. 60-61). The present volume begins with an "introduction" which discusses the topography, climate, faunal areas, changes in bird life and causes, enemies of birds, etc., and which, with the preliminary pages covers the first fifty pages. The text proper treats the gallinaceous birds, pigeons and doves, birds of prey, cuckoos, kingfishers, woodpeckers, goatsuckers, swifts, hummingbirds, and passerine birds up to and including the blackbird family. Thus are included 21 families and 106 species. The order of treatment and nomenclature agree with the official A. O. U. Check-list. The account of the Passenger Pigeon is especially full and of general interest. The section on the Heath Hen is likewise of interest. The few outline maps of the state showing distribution of local records of certain species are much appreciated by the busy reader.

While the text of the work will engage the full attention of the New England bird student, the outsider is likely to be especially attracted by the colored plates. The twenty-nine colored plates, most of which illustrate several species, are all by the late Louis Agassiz Fuertes; and they probably represent the last of his work to be published. As we turn from plate to plate, observing especially the perfection with which the birds are placed in posture, we find ourselves at first overlooking the skill with which the background and accessories are handled. For instance, as we look at Plate 50 we see the two pairs of Three-toed Woodpeckers, admirably done; but, with continued examination, our attention centers on the dead tree trunks, with their wonderful detail of light reflection. On Plate 54 the wings of the hummingbird are drawn indistinctly, just as they are always seen in photographs, which leads us to wonder whether a sharp photograph of the hummingbird's wings in action has ever been made. The artist evidently admired the coloring of the Blue Jay, for he made two figures of it (Plate 58). The plate showing the color contrast between the Horned Lark and the Prairie Horned Lark is of much interest (Plate 57); likewise the comparison on one plate of the Purple Grackle and the Bronzed Grackle.

Of all the plates, however, our choice is Plate 46, showing the Great Gray, the Great Horned, the Barred, and the Snowy Owls. There is something about it which is striking and fascinating. It is difficult to analyze one's reactions to this picture. It contains four strong and arresting figures, each with its own setting. Yet each background blends perfectly with the others. The whole is bold and incisive, clear and correct. Not only is this one our choice of the plates in this volume, but we can not recall any other plate of bird portraits by any artist that exhibits the artistry shown in this one, in our own humble opinion, of course. Our particular volume now falls open at this plate.

The present work is not a state list, nor is it continental in scope; nevertheless, we believe its merits warrant comparison in the latter class. And we are prone to regard it, when completed, as one of the masterpieces in American

ornithological literature. We understand that Volume I is out of print, and selling at a premium, although 5000 copies were printed. Of volume II, 7500 copies were printed, of which 6000 have already been sold. We trust that all who may desire a copy will be able to secure one. It is announced that Volume III will appear before the close of the present year.—T. C. S.

Life Histories of North American Shore Birds. Order Limicolae (Part I). By Arthur Cleveland Bent. Bull. 142, U. S. National Museum. Washington, 1927. Pp. i-ix+1-420. Pls. 55. Price, 85 cents.

This title makes the seventh in the series, and includes three families, viz., Phalaropodidae, Recurvirostridae, and Scolopacidae (in part), with forty-one species. The author uses seven nomenclatoral changes, and includes three forms new to North America, which have recently been discovered on the Alaskan coast.

This volume contains a marked typographical improvement over its predecessors in using the running head on the recto page to indicate the species which is treated on that page; this is a simple time-saving device which will surely be appreciated by the users of the book.

Dr. Charles W. Townsend has prepared the accounts of the Least and Semipalmated Sandpipers, while six European species found as stragglers in this country are treated by Mr. F. C. R. Jourdain. Mr. F. C. Lincoln has assembled the distributional data, as in the previous number.

In our review of the preceding volume in the series we made some criticism of the treatment of distribution. Our remarks were due in part to a misunderstanding of the method of naming localities in such a manner as to form an enclosed area. It was not, and is not now, our desire to comment on the accuracy with which this method was, and is, used, although we still believe it would be difficult to discover this method in the text unaided—simply for the reason that localities are mentioned which lie within outer ones mentioned. This is, however, of very secondary importance, and we would not bring it up anew. Our only point of criticism, as now restated, is that the method employed does not lend itself readily to visualization. We are inclined to believe, still, that this point is well founded, though it may be more or less irrelevant, because it may be taken for granted that the later volumes will follow the style of the earlier ones. And since we can not have a map of distribution, we are glad to have the verbal detail.

In passing we may remark on the great amount of labor which has necessarily been expended in selecting the best contributions of other authors upon the various habits of each species; many such selections are from unpublished manuscripts. The author's own observations are extensive. The student will not overlook the value of the comprehensive bibliography. It is doubtful if any other ornithological work is in greater demand than this series by Mr. Bent, and the constant call for the first volume in the series (Bull. 107, on the Diving Birds) is evidence of this.—T. C. S.

Birds of the Pacific States. By Ralph Hoffman. Houghton, Mifflin Company. New York. 1927. Pp. i-xix+1-353. Price, $5.00.

Mr. Hoffman's book is a descriptive catalogue of the birds of the Pacific coast, and treats nearly 400 species, while the paragraphs on "distribution" treat the subspecies distinctly. The book has the appearance of thorough preparation, and we may suppose that it will be accepted as an authoritative text on the birds

of the western coast. The judicious use of type faces facilitates the finding of particular material. The descriptions are prepared to be of particular help in field identification. Distribution is given separately for each of the three Pacific coast states. The illustrations are all by Major Allan Brooks, including ten colored plates showing several birds each, and many text figures. The illustrations are of more than ordinary beauty and poise.—T. C. S.

THE BIRDS OF PYMATUNING SWAMP AND CONNEAUT LAKE, CRAWFORD COUNTY, PENNSYLVANIA. By George Miksch Sutton. Annals Carnegie Museum, XVIII, pp. 19-239. Pittsburg, 1928.

"There is about every wooded swamp or open marsh an alluring mystery." With these opening words the author arouses our immediate attention and interest, because our experience tells us that it is so. Pymatuning Swamp lies in Crawford County in western Pennsylvania. The swamp covers about 10,400 acres, in what was once a preglacial valley draining into Lake Erie. The outlet became closed by morainic deposits, and the drainage was deflected southward, and into the Mississippi system. The old valley has been filled up by the growth of vegetation, and it is now in the bog stage. The densely forested swampland presents a typical wilderness in which the wild life remains practically undisturbed by man.

In discussing the interactions among the animals the House Wren is reported as abundant (though observers did not find it present at all twenty-five years before), and "is probably a mild enemy of its neighbors, for it is known to prowl about, destroying the eggs or nests of other birds."

The author's visits to the region began in 1922, and in each succeeding year, at different seasons, some time was spent there. Two hundred and forty-four species of birds are listed as occurring within the area treated. The classification follows the order in the A. O. U. Check-list, but the nomenclature varies from it in many instances. We have no doubt that these unofficial changes are sound, and may some day be officially accepted. But there is still a chance that some may not be. Possibly the A. O. U. Committee is functioning too slowly. At any rate authors appear to be unwilling to wait for the new check-list.

Besides a topographic map of the region, the volume contains eight plates in black and white and one in color. The frontispiece is a beautiful four-color plate, from a drawing by the author, depicting the male Northern Pileated Woodpecker, which is becoming rare in this region. This report is based upon a painstaking and exhaustive field study of the region, and makes a valuable addition to the avifanna of the state.—T. C. S.

ANIMAL LIFE OF THE CARLSBAD CAVERN. By Vernon Bailey. Williams & Wilkins Company, Baltimore. 1928. Pp. 1-195. Price, $3.00.

This volume is issued as Number 3 in a series of monographs on American mammals. Our interest is attracted by a chapter on the birds of the region. The Carlsbad Cavern is in the southeastern corner of New Mexico—in the Pecos Valley. The largest single room of the cavern is said to be 450 feet wide and 250 feet high, in places, while there are other large rooms. A little over four years ago the cavern was made a national monument. Important chapters are included on the following subjects: description of the cavern, neighboring life zones, conspicuous vegetation, mammals, birds, and reptiles of the region. Roughly counted, about eighty species of birds are mentioned, most of which are characteristic of the desert country. It is a non-technical and interesting book about an interesting region.—T. C. S.

Birds and Mammals Observed by Lewis and Clark in North Dakota. By Russel Reid and Clell G. Gannon. Published privately, Grand Forks, 1927. Pp. 1-24.

The authors here give us a list of the birds and mammals recorded by Lewis and Clark within the area now comprised within the state of North Dakota, and identify these species in terms of modern nomenclature. The work is well done and is a useful piece of compilation, not only for North Dakotans but others as well. A somewhat similar piece of work was done some years ago by Professor Shimek and entitled, "Early Iowa Locality Records" (Proc. Ia. Acad. Sci. XXII, 1915, pp. 105-119); and also for South Dakota by Professor W. H. Powers (Proc. So. Dak. Acad. Sci., IX, 1924, pp. 16-33). Professor W. H. Over has also published a similar review of the records of birds and mammals observed in the Dakota Territory by Audubon in 1843 (Proc. So. Dak. Acad. Sci, VII, 1922, pp. 41-55). These correlations between early explorations and recent conditions become valuable and necessary as time passes.—T. C. S.

Our Migrant Shorebirds in Southern South America. By Alexander Wetmore. Tech. Bull. 26, U. S. Dept. Agric. Washington, October, 1927. Pp. 1-24. Price, 5 cents.

This bulletin is a survey of the status in South America of the snipes, sandpipers, and plovers which breed in North America and migrate south of the equator in winter. The report is based upon studies made by the author in Argentina, Chili, Paraguay, and Uruguay from May 29, 1920 to May 19, 1921, or one year.—T. C. S.

The Magpie in Relation to Agriculture. By E. R. Kalmbach. Tech. Bull. 24, U. S .Dept. Agric. Washington, October, 1927. Pp. 1-29. Price, 10 cents.

Topics discussed are, distribution, life-history, food, and control methods. It is found that the Magpie possesses both harmful and beneficial habits. The evidence shows that a wholesale destruction of the Magpie is unwarranted. Under the head of control measures, full instructions are given for killing these birds by poisoned bait. In one local campaign in Oregon it was "conservatively estimated that 5,000 Magpies were killed." A full-page drawing of the Magpie and a map showing its distribution, with several other cuts, enhance the bulletin.—T. C. S.

General Ornithology Laboratory Notebook. By A. A. Allen, L. A. Fuertes, and M. D. Pirnie. Published by the Comstock Publishing Company, Ithaca, N. Y. Price, $4.00 ($3.00).

This is a guide for the instruction of beginning students in laboratory and field ornithology. In a brief introduction the authors offer an argument for the use of the laboratory method in the teaching of elementary ornithology; if such a practice needs defence, it is well given here. Doubtless most courses in ornithology contain some laboratory work, as well as field training, and class room instruction. To what extent each method is used will vary, perhaps, in every course.

It seems that this Cornell notebook might readily be adapted to nearly any situation. It provides for the study of the external anatomy of the bird, and the skeleton; complete analytical keys for the genera and families of North American birds; a page with spaces for listing twenty-seven bird skins identified

to order and family; a page with twenty-six spaces for listing skins identified to genus and species (we believe that about four of these sheets should be included); a list of the orders and families of North American birds, according to the new classification, with spaces for listing examples of each; a printed and illustrated copy of Dr. Allen's key for identification of birds' nests (which has been previously published, but which is here made readily available); a list of birds found in central New York (the teacher may substitute his own local list); a number of ruled pages for the student's migration records (which should have contained directions for use); and finally, 125 pages on which to record the facts of distribution and life history. These last sheets contain outline maps of the western hemisphere and an outline figure of the species to be treated. And if the student fills out half of the information for half of these sheets, he has had a pretty fair elementary training in the subject.

A course in ornithology is rather an expensive one for the average student. By the time he pays his laboratory fee, buys a Handbook and a field glass, and figures in some railroad fare for field excursions, the teacher may be a little reluctant to add an expensive notebook. Nevertheless, this notebook is a good one, doubtless the best extant, and it will be a great help to many teachers who have not taken time to work out so complete an outline of work; and in behalf of such teachers the authors may be thanked for making their work generally available.—T. C. S.

Short Papers on Ohio Birds. By Various Members of the Wheaton Club. Ohio State Museum Bulletin, Vol. I. No. 1, April, 1927. Pp. 1-79. Price, $1.00.

A new publication medium is thus established by the Ohio Archaeological and Historical Society. This initial number contains seventeen papers on the bird life of central Ohio, two of which are, unfortunately, anonymous. A paper by Mr. E. S. Thomas reports interesting observations on the nest life of the Black Vulture. Other papers describe the fish eating habit of ducks, Ohio nesting of Henslow's Sparrow, Snowy Owl records in Ohio, etc., etc. The creditable showing in this publication indicates a gratifying local activity in the study of bird life.—T. C. S.

The Nature Almanac: A Handbook of Nature Education. Edited by Arthur Newton Pack and E. Laurence Palmer. Published by the American Nature Association. Washington, D. C. 1927. Pp. i-viii+1-312. Price, $1.00.

The secondary title would be more indicative of the subject matter. The "nature calendar" covers only two dozen pages, but is much condensed and includes a quantity of information. The following pages contain a comprehensive catalogue of organizations concerned more or less in promoting nature study, with some description of the work of each; a catalogue, by states, of the various activities in nature study, together with a mention of many of the local leaders in such work; a surprisingly long list of nature study teachers, and the institutions with which they are connected. These catalogues represent a considerable amount of original compilation. "Nature study" seems to be a movement which has acquired a momentum, and it should help to produce a generation of nature lovers and conservationists, an enlightened race with better appreciation and support of scientific work. The book in hand gives us a glimpse of the progress toward this end. About two years ago the Doubleday, Page & Company published a "Nature Program" of about 180 pages, which reports the chief changes in nature month by month.—T. C. S.

DAKOTA BIRDS. By Loren G. Atherton and Nora M. Atherton. Published by J. Fred Olander Company, Pierre, S. D. 1925. Pp. 1-238. Figs. 39, 12 colored plates. Price, $2.00.

This book, though published two years ago, has just come to our attention. It is strictly a home product—on Dakota birds, by Dakota authors, published by Dakota printers. Many of the common birds of South Dakota are appropriately discussed in a way to interest beginners. The biographies are informal and follow no uniform mode, each specific account presenting the outstanding habits or characters. The water birds and the birds of prey are not treated; but, beginning with the woodpeckers, the families of land birds are included. The book contains a number of plates, in both black and color, by the junior author.—T. C. S.

A STUDY OF THE ECONOMIC STATUS OF THE COMMON WOODPECKERS IN RELATION TO OREGON HORTICULTURE. By Johnson Andrew Neff. Privately printed, Marionville, Missouri, 1928. Pp. i-viii+1-96. Tables, 11; graphs, 6; plates, 8. Price, $1.50.

Mr. Neff here gives us an excellent survey of the economic relations of the woodpeckers which are found in the orchards of the northwest. For the purposes of the discussion the author divides these birds into six groups, viz., Hairy Woodpecker Group, Downy Woodpecker Group, the Sapsuckers, the California Woodpecker, the Lewis Woodpecker, and the Flicker Group. For each of these groups there is a concise resume of the general knowledge of the forms, the local distribution, and the habits. Following this discussion the author presents his own original observations and data. The conclusions are based upon the examination of stomach contents, upon field study by the author, and upon testimony of farmers and orchardists. The report is a valuable contribution to our knowledge of these birds, and will need to be consulted by all economic ornithologists, and by any students who are especially interested in the Picidae.—T. C. S.

RETURNS FROM BANDED BIRDS 1923 TO 1926. By Frederick C. Lincoln. Tech. Bull. 32, U. S. Dept. Agric. Washington, December, 1927. Pp. 1-96. Price, 20 cents.

This bulletin is a mass of records of returns of many species of birds which had been previously banded. The tables show the banding station, date, locality of return (except where the word "same" is used, leaving an uncertainty of meaning). During the two and a half years covered by the report 234,692 birds have been banded in North America, from which 10,338 returns have been secured.—T. C. S.

A YEAR'S PROGRAM FOR BIRD PROTECTION IN PENNSYLVANIA. By George Miksch Sutton. Bull. 9, Board of Game Commissioners of the Commonwealth of Pennsylvania. [1928]. Pp. 1-50. Thirty-six figures. Free.

The cover of this pamphlet is adorned with a beautiful figure of the Cardinal in color, by Dr. Sutton. Two of Dr. Sutton's drawings, of the Screech Owl and of the Goshawk, are reproduced in the pages. The text is, to a large extent at least, a reprinting of Bulletin No. 7, which was issued in 1925. This attractive bulletin contains a wealth of information, and it is hoped that it will have a wide distribution. We would suggest that the bulletin might well be dated.—T. C. S.

THE SNAKES OF IOWA. By J. E. Guthrie. Bull. 239, Agric. Exp. Station, Ames, Iowa. September, 1926. Pp. 147-192. Twenty-one figures.

We trust we may be pardoned for including a title on this subject in this department. The bulletin is so well organized, and appears to be so useful an aid in identifying the common snakes of the middle west, that we thought some of our readers would be glad to know of it.—T. C. S.

Outdoor America for January, 1928, contains an article by George Miksch Sutton entitled, "A Fair Deal for the Hawks and Owls." This is an unbiased and sane educational discussion of the pros and cons of these birds. Dr. Sutton is a new leader in the revolt against protecting birds on purely economic grounds: he believes that birds should be allowed to live as well for their beauty. At the same time he recognizes that there are bad birds, which must be restrained or controlled, not exterminated necessarily. In noting this judicial appraisal of the birds of prey by one of Pennsylvania's game officials, we reflect upon the advance in viewpoint over four decades ago, when a Pennsylvania legislature placed the famous "scalp act" on the books. In the article here mentioned we find a reproduction of the painting of the Goshawk which Dr. Sutton made for the WILSON BULLETIN about two years ago.

In Professor E. H. Strickland, of the University of Alberta, we find a skeptic as to the importance of birds in the control of insect pests. He has published ar article on "Can Birds Hold Injurious Insects in Check?", in the *Scientific Monthly* for January, 1928. He says that, "Extravagant claims are made regarding the financial debt we owe the birds in their role of saving the crops from complete destruction by insects." He believes that birds are a factor in producing the annual mortality of 99.3 per cent among such insects, but that there are other factors, such as parasitic insects, local food supply, direct effect of climate, etc. Then after a lengthy and instructive argument he states his conclusion thus, "that the annual destruction of plant-feeding insects by birds has no appreciable effect upon their ultimate abundance.'

The January-February number of the *Condor*, much enlarged, is devoted to a biographical sketch, by Harry Harris, of Robert Ridgway, the "dean of American ornithologists." Besides being very profuse in illustrations, it includes an extensive, probably complete, bibliography of Mr. Ridgway's writings—540 titles. This is a notable and welcome contribution to American biography, for the publication of which the Cooper Ornithological Club deserves the congratulations and gratitude of all ornithologists.

The *Cardinal* for January, 1928 (II, No. 3), is devoted to the biology of Cook Forest, in northwestern Pennsylvania. A colored frontispiece by George Miksch Sutton shows a pair of Canada Warblers, with a background of rhododendron blossoms. There are articles on the flowers, birds, mammals, and reptiles of the region.

Dr. E. W. Nelson has a profusely illustrated article on bird banding in the *National Geographic Magazine* for January, 1928. Among the pictures are snap shot portraits of many of the leading banders. Separates of this article have

been distributed by the Biological Survey through the courtesy of Mr. S. Prentiss Baldwin.

We may again refer to the *Nature Notes from Yellowstone Park*, which continues to appear at monthly intervals. This mimeographed periodical is edited by Mr. E. J. Sawyer, Park Naturalist, and published in the office of the Superintendent of the Park. We think that it may be obtained by those who are interested in the natural history of the Park. It contains notes on the birds, mammals, flowers, geysers, etc., for all seasons of the year. The issue for September, 1927, contained a partial census of the wildfowl in the Park; these figures included 261 Barrow's Golden-eyes for the region around Yellowstone Lake alone.

American Game for January, 1928, contains an article on the "Food, nesting and decrease studies of the Bob White," by Herbert L. Stoddard. The Quail Investigation in the South is now in its fourth year, though originally planned for three years. The present article is a resume of recent results of these studies.

Professor A. C. McIntosh has written an article on the "Biological Features of Cascade Valley and Vicinity" (published in *The Black Hills Engineer*, January, 1928, pp. 68-83), in which he gives an account of the wild flowers, birds, lower vertebrates, and insects of this locality in the Black Hills of South Dakota.

The State of Pennsylvania has issued a neat little booklet entitled "How to Know the Trees and Shrubs of Pennsylvania, Native and Introduced." By Geo. S. Perry. Published over the imprint of the State Department of Forests and Waters, Harrisburg, 1926.

We are indebted to Mr. Harry Harris for a copy of the illustrated leaflet announcing the exhibition of the work of Maj. Allan Brooks, held in connection with the third annual meeting of the Cooper Ornithological Club, May 4-6, at San Diego, California.

Some of our readers may be interested to know that the fourth, and much enlarged, edition of "American Men of Science," has recently been issued. This book, of over eleven hundred pages, contains biographies of 13,500 American scientific men and women. It is published by the Science Press, Grand Central Terminal, New York, and is sold at ten dollars.

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MEMBERSHIP ROLL OF THE WILSON ORNITHOLOGICAL CLUB

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TO OUR CONTRIBUTORS

Our members are urged to submit articles for publication in the BULLETIN Short items are desired for the department of General Notes, as well as longer contributions, especially pertaining to life-history, migration, ecology, behavior, song, economic ornithology, field equipment and methods, etc. Local faunal lists are also desired, but they should be annotated, at least briefly, and should be based upon sufficient study to be reasonably complete. Authors are asked to include the common name, the scientific name (from the A. O. U. check-list), and annotations, and they should be arranged in this order. The annotations should include explicit data concerning unusual species. Omit serial numbering.

THE MANUSCRIPT. The manuscript, or copy, should be prepared with due regard for literary style, correct spelling and punctuation. Use sheets of paper of good quality and of letter size (8½x11 inches); write on one side only, and leave wide margins; if at all possible manuscript should be prepared with a typewriter, using double spacing and a reasonably fresh, black ribbon.

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